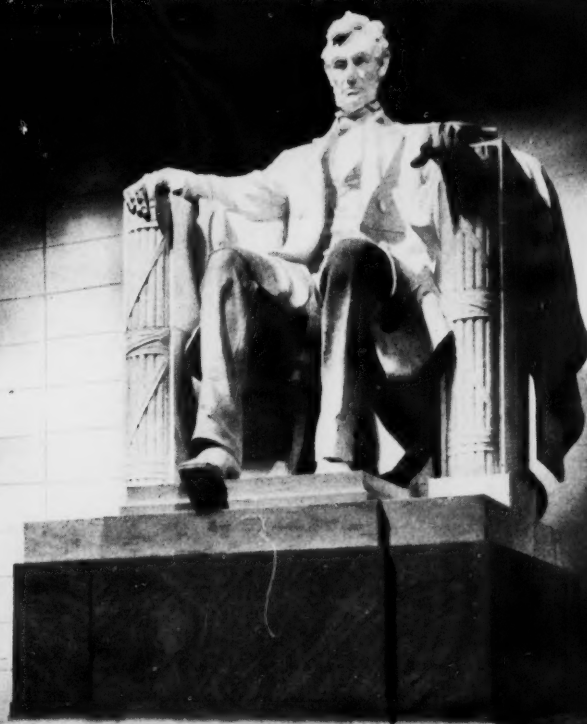


SOAP

SANITARY CHEMICALS

UNIV OF IDAHO
MOSCOW

More than a half-century before the days when Abraham Lincoln was President of the United States, Dodge & Olcott Company supplied leading American manufacturers with fine essential oils and perfuming materials. That reputation for integrity and fair dealing, won more than a century ago, still guides the policies of the organization today.



DODGE & OLCOTT COMPANY
NEW YORK

Boston : Chicago : Philadelphia : St. Louis : Los Angeles
Plant and Laboratories — Bayonne, N. J.

February 1941

**YOUR BEST
YEAR 'ROUND
SPECIFICATION**

for

*Uniform
QUALITY
Guaranteed
PURITY
Dependable
DELIVERIES*

**DIAMOND
ALKALIES**

58% Light Soda Ash . . . 58% Light Fluffy
Soda Ash . . . Diamond Soda Crystals . . .
76% Caustic Soda (Solid & Flake) . . . Liquid
Caustic Soda

**STANDARD
SILICATES**

Silicate of Soda, Liquid . . . Silicate of Soda, Glass
. . . Sodium Metasilicate . . . Silicated Alkalies

DIAMOND ALKALI CO.
PITTSBURGH, PA., and *Everywhere*

Adventures of FULDY



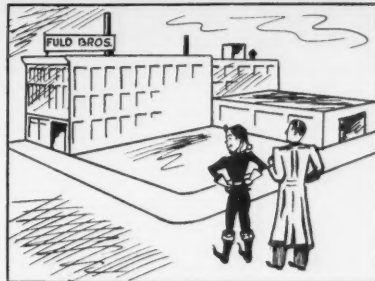
Copyright 1941, Fuld Bros.



"THE WAR'S ON! AND THE INSPECTOR is on friend porter's neck . . . because the only thing he's killing with that weak disinfectant is *time*! From the looks of things, the poor porter might do a much better mopping job on his brow!"



"WOW! WHAT A FEARFUL EARFUL Jobber Jones is getting! He's just been contacted by the 'front' . . . and the porter is really pouring it on! Brother, his language is as strong as the disinfectant is weak! Looks like a 'court martial' is in order."



"I'M A GOOD LITTLE SOLDIER MYSELF, you know. And I aim to enroll Jobber Jones in the right army. So back we go to 'headquarters' . . . FULD BROS. . . where trained technicians are perfecting death-dealing disinfectants."



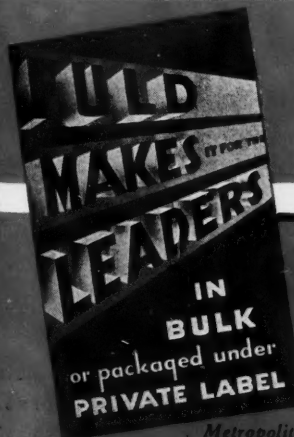
"JONES' FOCUS IS NO HOCUS-POCUS! He's witnessing a rigid, scientific germ-killing test that every FULD disinfectant must undergo. That's why the FULD guarantee of strength, quality, purity and uniformity means so much to jobbers all over America."



"WAS JONES IMPRESSED? JUST TAKE a look at me carrying in the first can of his disinfectant shipment . . . and with his own private label on it, too! But we've still got work to do . . . because that porter needs reinforcements fast!"



"THE SAME PORTER . . . THE SAME inspector . . . but a FULD disinfectant and a happy ending! And, friend reader, if you too want a disinfectant that will put germs down for the count . . . count on FULD BROS. for your complete line!"



DEODORANT BLOCKS
LIQUID DEODORANTS
LIQUID CLEANERS
LIQUID SOAPS
OIL SOAPS
INSECTICIDES

DISINFECTANTS
SELF POLISHING WAXES
PASTE WAXES
POWDERED WAXES
FLOOR SEALS
FLOOR TREATMENTS

METAL POLISHES
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SPECIAL CLEANERS
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DEODORANT-BLOCK HOLDERS

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Jobbers
Only!

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You can make the *Oak Moss* effect
a merchandising asset — with

**Methyl Ionone
Gamma**

by Albert Verley, Inc.

Ordinarily beyond the means of the soap perfumer, the Oak Moss effect becomes a practical possibility with Methyl Ionone Gamma.

Now this valuable material is available on a production basis, entirely manufactured in the United States. Because of its tremendous power, a very little goes a long way—enabling you to take advantage of this extra sales appeal for your product.

To an interesting degree, this new product of the Albert Verley, Inc. Chicago laboratories reproduces in part the now scarce Oak Moss products . . . Write today for working sample and prices.

★
Albert Verley
A R O M A T I C S

ALBERT VERLEY, INC., D. A. Bennett, President • 1621 CARROLL AVENUE, CHICAGO, ILLINOIS
114 EAST 25th STREET, NEW YORK • MEFFORD CHEMICAL COMPANY, LOS ANGELES

SOAP

and

SANITARY CHEMICALS

Reg. U. S. Pat. Office

**FEBRUARY
1941**

SANITARY Products Section, which forms a part of every issue of SOAP, begins on page 75.



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DEVELOPING OUR *Domestic Source* OF RAW MATERIALS

IS AN *Important* PHASE OF OUR MANUFACTURING PROGRAM

The products immediately available will be of considerable interest to the perfumer. Here are just a few:

Cyclamal An Aldehyde of great strength, valuable in most floral compositions. For the finest perfumes as well as in soaps and cosmetics. Particularly valuable in odors of the type of Lily of the Valley and Lilac.

Citronal A fresh clean lemon odor of interest today because of the shortage of Oil of Bergamot and Oil of Lemon. Very stable and free from the objectionable by-odors found in Citral. Produces a lasting lemon odor in soaps and creams. Also of great interest in the manufacture of fine Eau de Colognes.

Floranol A single chemical with a fruity rose note. Mild, very persistent, harmonizes the other ingredients in a perfect composition. Soap fast. Often used in Tea Rose type soap odors. Will not discolor in creams or soaps.

Phenyl Acet Aldehyde Di Methyl Acetal Enjoying great popularity. Fine rose leaf note makes it very interesting in many floral compositions. Very lasting in soaps. Gives a pleasing lift to any odor.

Phenyl Ethyl Alcohol Extra Fine A special high grade for use in fine perfumes and cosmetics.

Ionone Complete and Ionone Methyl The basis of Violet odors.

Indol Now first produced in this country.

Para Cresol Methyl Ether In Oil Ylang Ylang Artificial.

Para Cresol Ethyl Ether In Oil Ylang Ylang Artificial.

Ethyl Phenyl Glycidate A Pineapple Base.

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Hydratropic Aldehyde A Hyacinth aroma.

Di Methyl Acetal of Hydratropic Aldehyde Softer and more delicate than Hydratropic Aldehyde.

Product GL-4C A non-toxic wetting agent and detergent with excellent foaming qualities for liquid dentifrices, soapless shampoos, brushless shaving creams, etc.

The above products together with our already extensive list of American made aromatics enable the perfumer to create perfumes for soaps and cosmetics secure in the knowledge that his supply of raw materials will not be interrupted and that he can maintain a high standard for his finished product.

Aromatics Division
GENERAL DRUG COMPANY

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9 S. CLINTON ST., CHICAGO
1019 ELLIOTT ST., W., WINDSOR, ONT.

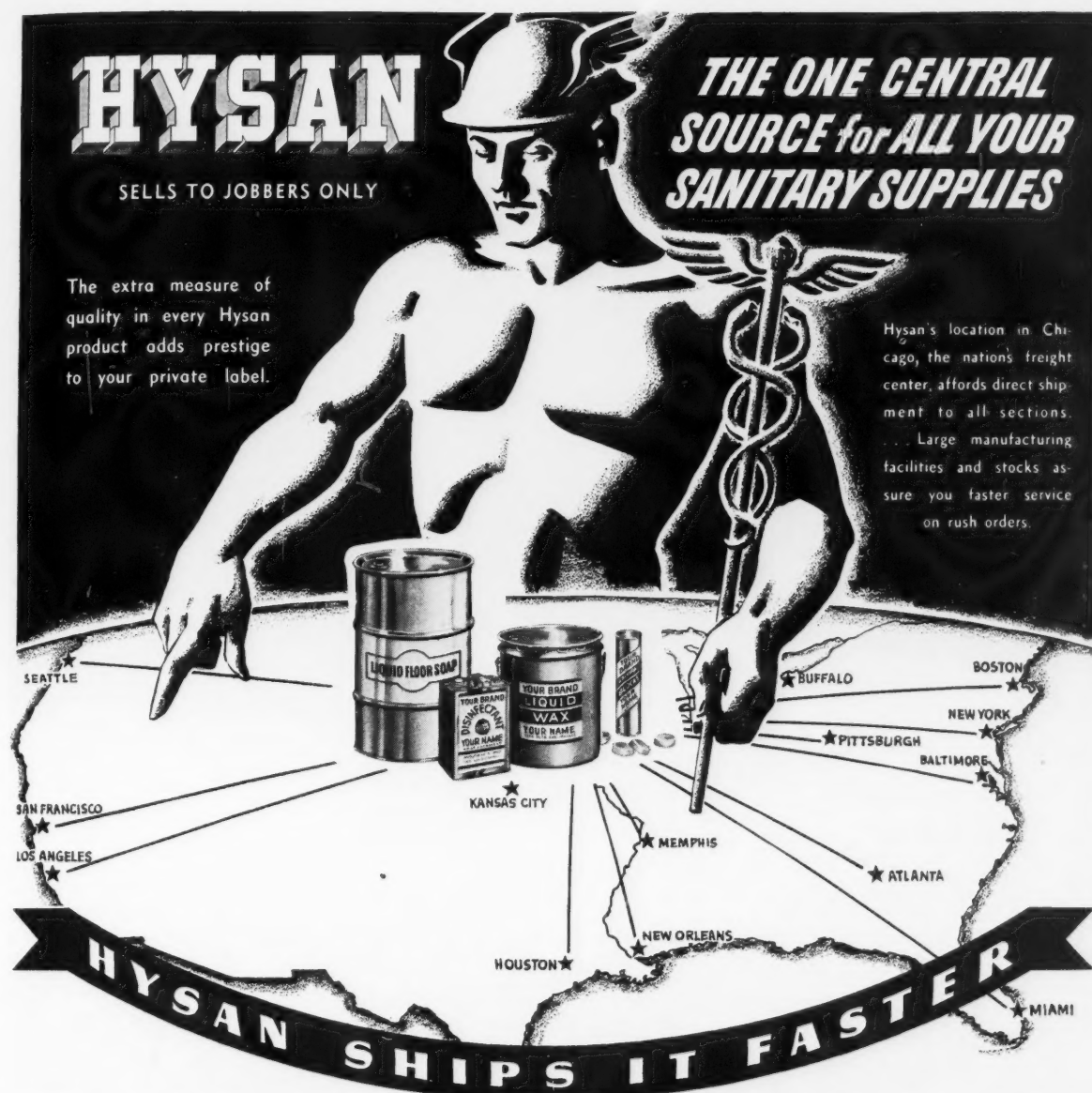
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SELLS TO JOBBERS ONLY

**THE ONE CENTRAL
SOURCE for ALL YOUR
SANITARY SUPPLIES**

The extra measure of
quality in every Hysan
product adds prestige
to your private label.

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center, affords direct ship-
ment to all sections.
... Large manufacturing
facilities and stocks as-
sure you faster service
on rush orders.



ORDER YOUR WAXES, DEODORANTS, CLEANERS, ETC. FROM HYSAN AND ENJOY THESE REAL ADVANTAGES

★ QUALITY LEADERSHIP

Every item featured in Hysan's catalog is made from the choicest ingredients. Each product has been designed to enhance your prestige, assure your quality leadership.

★ MORE NEW ITEMS

Our field men find out what items your trade wants. Then our chemists proceed to make them. It is a fact that Hysan gives its jobbers many more new profit makers to sell each year.

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When you buy all your supplies from Hysan, you save on freight, bookkeeping, inventory. You purchase many premium quality waxes, cleaners, etc. at ordinary prices. These savings add up.

★ DE LUXE PACKAGES

The Hysan line is packaged to sell. It offers you many more deluxe containers. Private labels are more attractive. Hysan products have the eye appeal essential to the sale of quality goods.

★ INCREASED VOLUME

Scores of standard Hysan products are engineered to meet users requirements more successfully than competitive products. This is reflected in your increased volume of sales per customer.

★ REAL SALES HELPS

Every new merchandising plan . . . all Hysan dealer postals, folders, wall cards, technical bulletins, etc. are available to every Hysan jobber for successful sales promotion.

HERE IS THE PROOF

Hysan jobbers are today the fastest growing sanitary supply jobbers in the U.S.A. . . . Write for new Hysan catalog.

HYSAN PRODUCTS COMPANY - - - 2560 ARMITAGE AVENUE, CHICAGO

CLEANERS • DISINFECTANTS • SOAPS • DEODORANTS • BLOCS • INSECTICIDES • POLISHES • WAXES • FLOOR TREATMENTS



DRUMS THAT CAN "TAKE IT"

No one coddles a drum. It is bounced from truck to pavement—skidded off a loading platform—dropped with a resounding bump into the hold of a ship.

But Crown drums are made to "take it." In-built strength without excess weight is the simple formula that has built up Crown's reputation as a source of supply for durable, trouble-free drums.

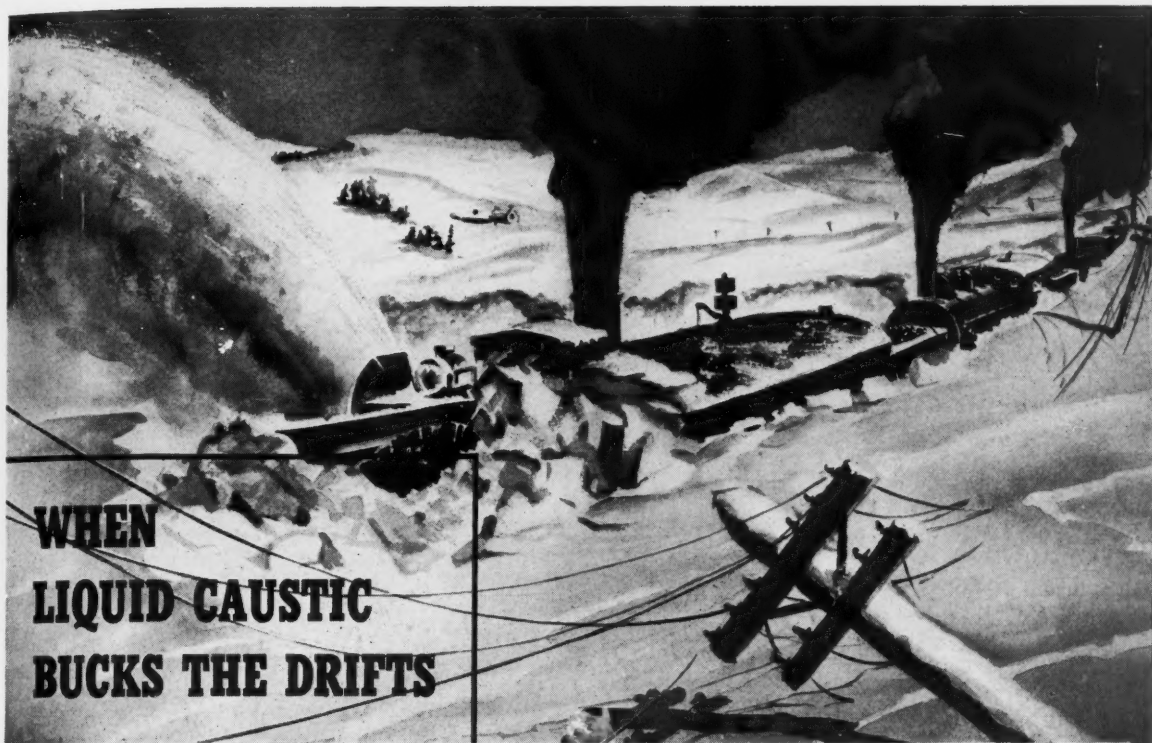
CROWN CAN COMPANY, PHILADELPHIA, PA.

Division of Crown Cork and Seal Company

BALTIMORE ST. LOUIS HOUSTON MADISON ORLANDO
FORT WAYNE NEBRASKA CITY

CROWN CAN

INDEPENDENT AND HELPFUL



WHEN LIQUID CAUSTIC BUCKS THE DRIFTS

UP to two years ago, cold weather meant that Liquid Caustic Soda stayed liquid only a short time after leaving the plant—would have to be steamed for hours before unloading. In cold weather or warm, it was sure to pick up enough metallic contamination from the car to make it worthless for some uses.

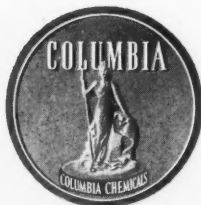
Two Columbia achievements have ended these troubles. One is the first protective coating to successfully withstand the action of Liquid Caustic at high temperatures. The other was the development of a new type of car—so effectively insulated that even 73% Liquid Caustic stays hot and liquid throughout ordinary shipping schedules.

For two full years these Columbia developments have proved their value to Liquid Caustic users. Because Columbia Caustic arrives as a purer product—and ready for unloading without tedious, costly "defrosting." Practical improvements such as these are typical of our efforts to make *all* Columbia products more profitably useful to our customers.

*If it's a Columbia Product—
you're sure it's the best*

**SODA ASH • CAUSTIC SODA
SODIUM BICARBONATE
CALCIUM CHLORIDE
LIQUID CHLORINE
HENNIG PURIFIER
MODIFIED SODAS
CAUSTIC ASH
PHOSFLAKE
CALCENE
SILENE**

*You'll like the way Columbia Products—backed by
Columbia Technical Service—do their job for you.*



PITTSBURGH PLATE GLASS COMPANY

Columbia Chemical Division

30 ROCKEFELLER PLAZA

NEW YORK, N.Y.

Chicago • Boston • St. Louis • Pittsburgh • Cincinnati • Cleveland • Minneapolis • Philadelphia • Charlotte

IF YOU MAKE *Naphthalene* BLOCKS & CRYSTALS
YOU WILL WANT TO USE FELTON'S FINE, NEW

NAPHTHA-PERFUMES

made especially for
NAPHTHALENE

"NAPHTHA-PERFUMES" are not just another assortment of odors. Our years of experience and experimentation have proven to us that for best results in the perfuming of naphthalene, certain aromatic ingredients are suitable, while many others are not. Continuous research has taught us, too, the correct materials to use, many of them manufactured at our own plant. When you buy Felton's Naphtha-perfumes you profit by this experience and guarantee yourself the best there is to be had.

NAPHTHA-PERFUMES are available in a complete series of popular odors and are economically priced—too.

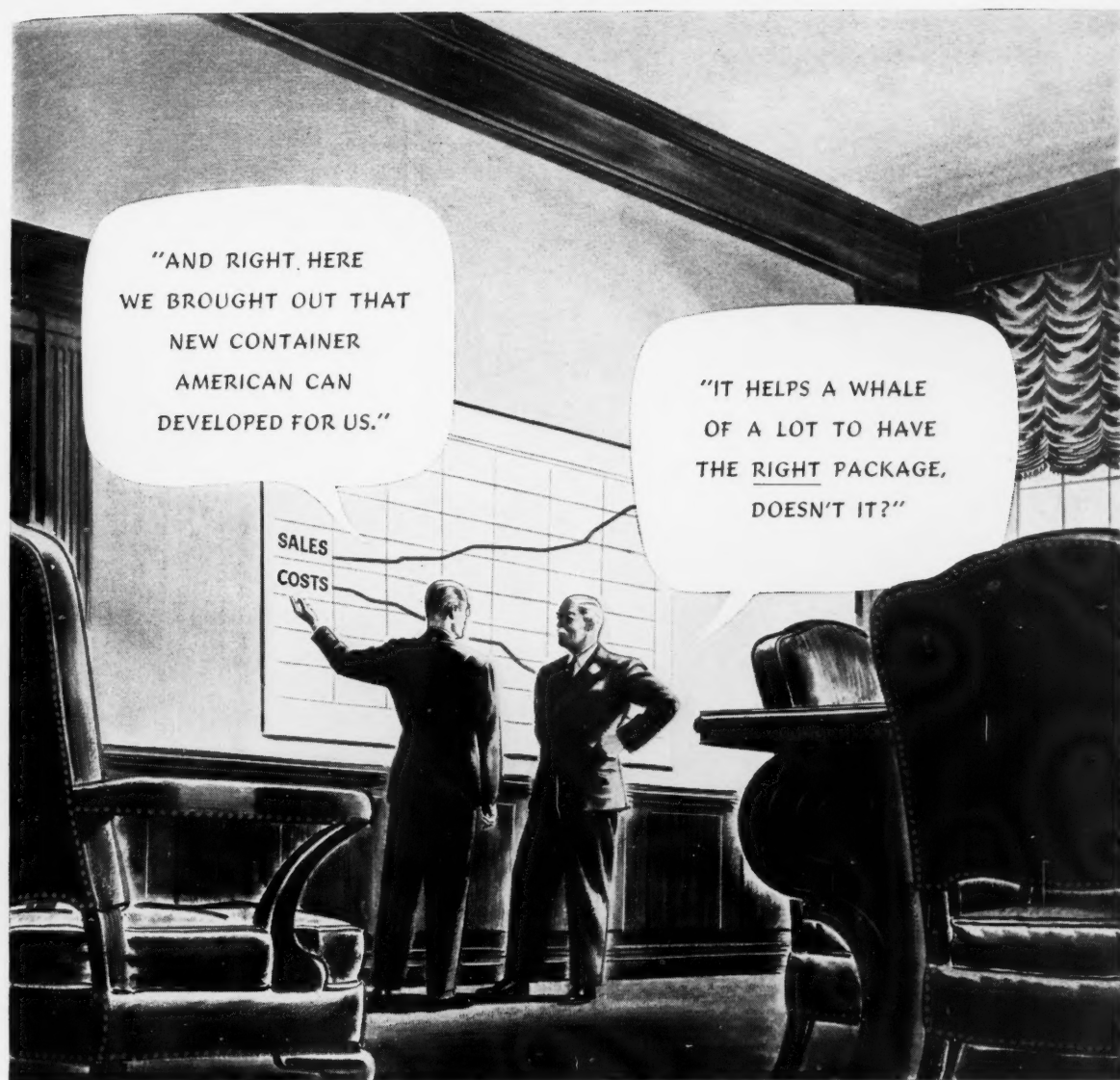
WRITE US TODAY

and we shall be glad to
send you suitable testing
samples.



FELTON
CHEMICAL COMPANY, INC.
603 JOHNSON AVENUE
BROOKLYN, N. Y.

Manufacturers of AROMATIC CHEMICALS, NATURAL DERIVATIVES, PERFUME OILS,
ARTIFICIAL FLOWER and FLAVOR OILS
Branches in Principal Cities



American Can's research laboratories, and engineering and development staffs, are searching constantly for ways to help increase sales of a wide variety of products . . . through better quality-protection . . . through greater convenience and popular appeal. We may have ideas *you* can use to stimulate sales. Write us your problems today.



AMERICAN CAN COMPANY, 250 PARK AVENUE, NEW YORK, N. Y.
104 SO. MICHIGAN AVE., CHICAGO • 111 SUTTER ST., SAN FRANCISCO





GOOD BLENDING IS AN ART

From Ceylon... from India... from Java and other parts of the world come many different types of tea which the "cup tester," with his special skill and knowledge of tea flavors and blends, checks to assure a product of high quality and popular appeal. Experts in this line develop intuitive skill for sensing results that will succeed — as do expert blenders of perfume and cosmetic odors.

How well Givaudan's staff has developed this intuitive skill or art of odor blending is shown by the great number and variety of successful odors that have originated in the Givaudan laboratories. Not only odors for individual items but also compounds that can be adapted for use in complete lines—perfumes, creams, powders, lipsticks, rouges,

FOR FLY-SPRAY FRAGRANCES THAT WILL BUILD YOUR SALES

Creation of odors for special purposes is an important part of Givaudan service to all users of aromatic materials.

And Givaudan fly-spray odors, developed to meet the requirements of the varied products in this field, have met with increasing popularity—evidenced by

lotions, colognes, bath salts, hair tonics, toilet waters and other items. Perfumers and cosmeticians in many of the nation's leading houses rely upon Givaudan regularly for assistance in the selection and use of materials. They have come to rely, too, on the great variety of Givaudan's products which meet the demands for unusual items as well as the large-scale demands for staple materials.

Why not turn to Givaudan for assistance in developing any new product or line you may have in mind? You will find our knowledge and experience in blending a real source of economy and profit. Samples and prices of Givaudan products are always available on request.

increasing consumer demand for fly sprays made with them.

One of these odors can be scientifically blended to express the individuality of your product. The full co-operation of our research and laboratory staff is available to help you in the selection of odors that can aid in building sales and consumer preference for your product.

Send us a sample of your unperfumed spray and we will be glad to suggest an odor that will fulfill these requirements.

GIVAUDAN-DELAWANNA, INC.

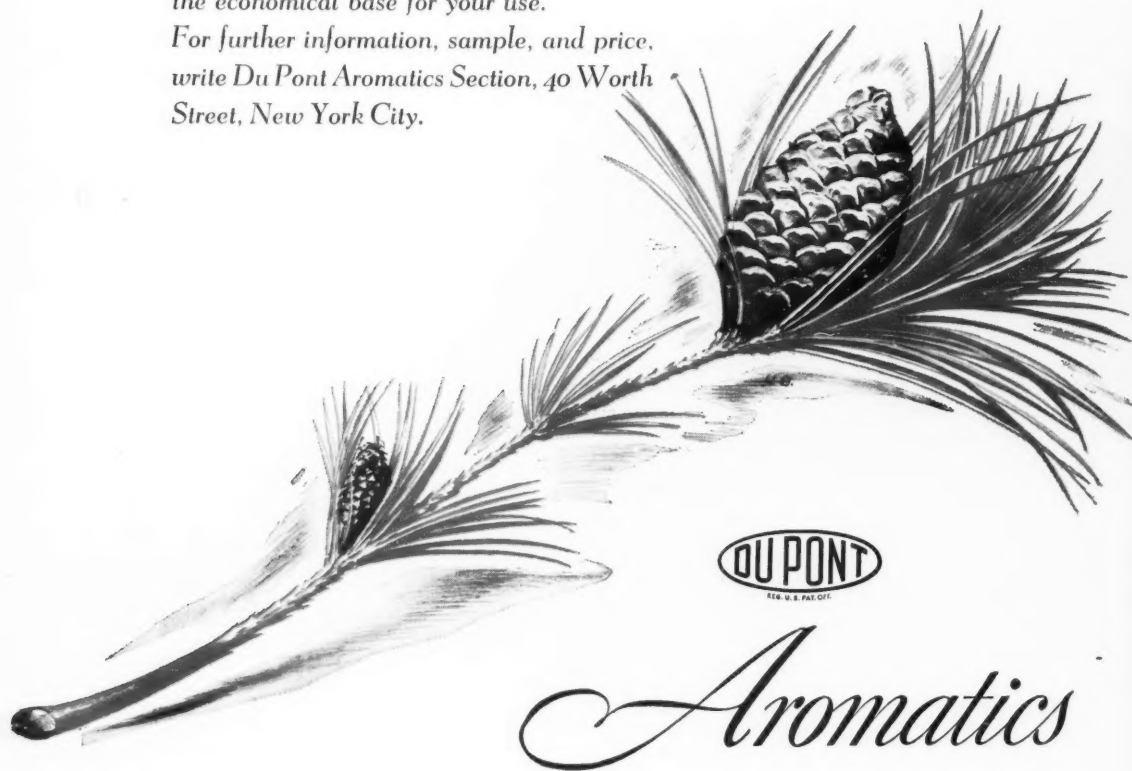
330 WEST 42ND STREET, NEW YORK, N. Y.

Du Pont Isobornyl Acetate

**THE ECONOMICAL ODOR BASE FOR SOAPS, DEODORANTS,
PARA BLOCKS AND OTHER SANITARY PRODUCTS**

This pine needle base is continually adding to its wide popularity in bath oils and powders, soaps, deodorants, theatre sprays, disinfectants and other sanitary products. Du Pont Isobornyl Acetate is water-white, resistant to alkali, and non-discoloring. The low price and dependable quality make it the economical base for your use.

For further information, sample, and price, write Du Pont Aromatics Section, 40 Worth Street, New York City.



Aromatics

**E. I. DU PONT DE NEMOURS & CO. (INC.), ORGANIC CHEMICALS
DEPARTMENT, FINE CHEMICALS DIVISION, WILMINGTON, DELAWARE**

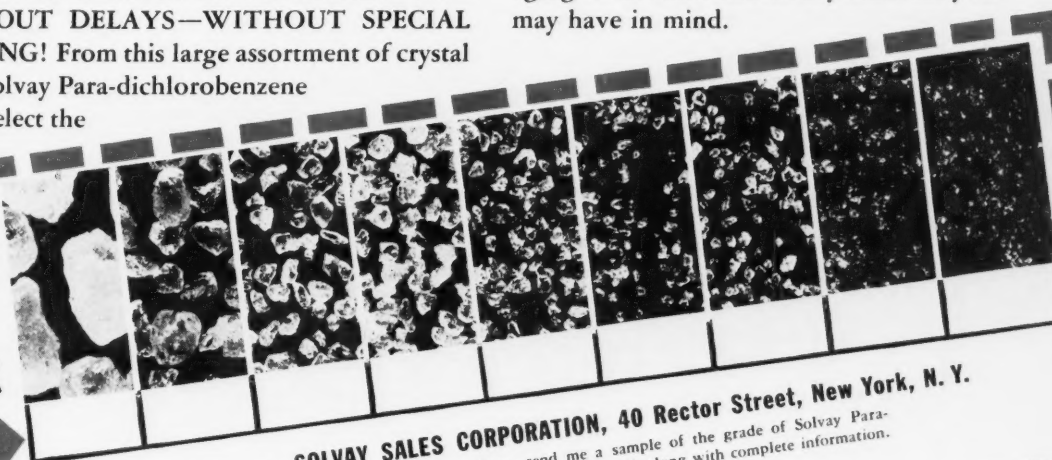
SIGN ON THE DOTTED LINE FOR 1941!

... And Get the Advantages of SOLVAY'S MANY CRYSTAL SIZES OF PURE PARA-DICHLOROBENZENE

Before you sign up for this year's supply, remember that SOLVAY MAKES AVAILABLE TO YOU ALL THESE *STANDARD* CRYSTAL SIZES OF PURE PARA-DICHLOROBENZENE—WITHOUT DELAYS—WITHOUT SPECIAL ORDERING! From this large assortment of crystal sizes of Solvay Para-dichlorobenzene you can select the

size that meets your *exact* requirements for avoiding wastage in manufacturing blocks... the size *exactly* suited to your transparent or other packaging... the *exact* size for any other use you may have in mind.

YOU
CHECK
THE
GRADE



WE'LL DO THE REST

These photos are actual size. We will send you a sample of the grade you check off... send you complete information on Solvay Para-dichlorobenzene... or if you are uncertain of your requirements, our technical staff is ready to help you select the most efficient grades for your particular purposes. Make use of Solvay service!

FILL IN THE COUPON NOW!

SOLVAY SALES CORPORATION, 40 Rector Street, New York, N. Y.

Gentlemen: Please send me a sample of the grade of Solvay Para-dichlorobenzene I have checked off, along with complete information.

Name..... University of Idaho
LIBRARY
Company..... MOSCOW IDAHO
Address..... State.....
City.....

AJ 2-41

METSO RINGS UP

...SALES AND PROFITS!

FROM the Southland, from the West, North and East, fabricators and compounders of cleaners and cleansers report that Metso Granular Sodium Metasilicate and Metso 99 Sodium Sesquisilicate help them to raise sales curves and keep them up. The answer rests in the symbol SiO_2 which chemically stands for the silica content.

But the right amount of silica is important and Metso has the scientifically balanced proportion, which insures these extra values in cleaning compounds:

1. Prompt wetting and emulsification
2. Sustained cleaning activity
3. Restrained corrosive action
4. Prevention of re-settling of dirt

Start ringing up more sales and profits for yourself by putting Metso into your various formulae. Metso Granular is shipped in 300 lb. barrels, 350 lb. drums, 100 lb. bags and veneer drums; Metso 99 is available in 350 lb. drums, 100 lb. drums and bags. Write or telegraph for prices and samples.

SiO_2

SiO_2

SiO_2

METSO BALANCED SILICATES

Metso Granular Metasilicate — Metso 99 Sesquisilicate

U. S. Pat. 1898707
U. S. Pat. 1948730
U. S. Pat. 2145749

Manufactured Exclusively by

PHILADELPHIA QUARTZ CO.

General Offices and Laboratory: 125 S. Third St., Philadelphia, Pa. Chicago Sales Office: Engineering Bldg. Sold in Canada by National Silicates Ltd., Toronto, Ont. Nine plants. Distributors in over 60 cities.

Established 1831



LOOK ALIKE?
Identical!
THAT'S THE
Uniformity

**YOU FIND IN DAVIES-YOUNG
 PRODUCTS—EXACTLY ALIKE
 FROM DRUM TO DRUM**



Complete laboratory control of manufacturing, from raw materials to finished, standardized products, assures the highest degree of uniformity in every product of Davies-Young.

**A COMPLETE LINE OF SOAPS AND
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LIQUID FLOOR SOAPS Scrubbing soaps for specific types of floors.

LIQUID TOILET SOAPS Concentrated liquid and special soaps.

CONCENTRATED SOAP BASES For liquid shampoo, toilet, scrubbing soaps.

LIQUID FLOOR WAXES AND FINISHES Including self-polishing liquid waxes.

OIL SOAPS Vegetable oil scrubbing soaps and cleansers; Surgical soaps, etc.

DISINFECTANTS Pine oil and coal tar, deodorant blocks.

INSECTICIDES Fly and moth sprays and Contact Insecticide and Roach Powder.



DAVIES-YOUNG PRODUCTS

**FOR CATALOG AND PRICES, WRITE
 THE DAVIES-YOUNG SOAP COMPANY
 DAYTON, OHIO**

An

ARTIFICIAL BERGAMOT

for Soap

One of the major problems confronting the perfumer today is that of a satisfactory replacement for natural Bergamot.

In our effort to produce an artificial Bergamot of true fidelity for use in fine perfumes, we first micro-analyzed the natural oil, and then with our findings set about to produce the finest artificial Bergamot, regardless of cost.

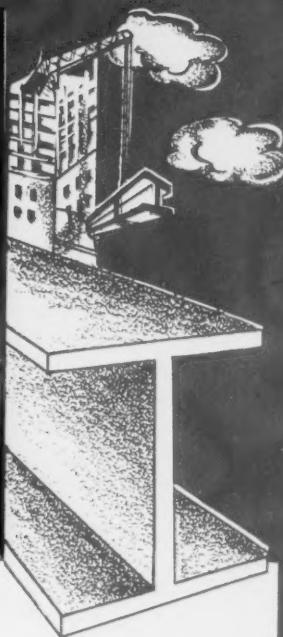
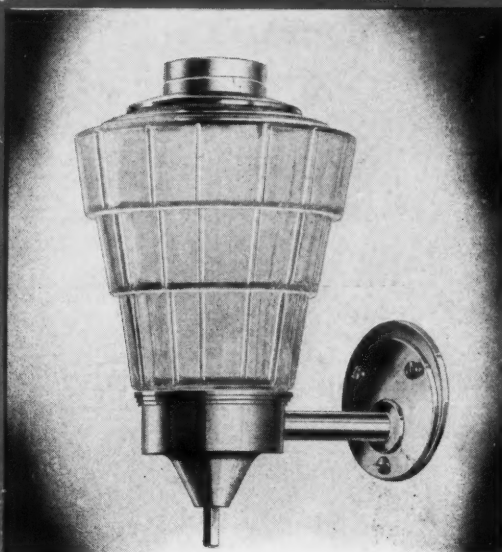
BERGAL 4I was the final result. This product has been tested with the finest natural oils and it stands up well by comparison, in odor, in aging characteristics, and in finished formulas. Like all fine things, BERGAL 4I is expensive—\$8.40 per pound. It is 100% American made and can be supplied in unlimited quantities.

Using BERGAL 4I for a start, we have developed "ARTIFICIAL BERGAMOT FOR SOAP", a considerably less expensive version of the original formula, which is completely satisfactory for use in fine toilet soaps.

A testing sample will be gladly sent at your request. ARTIFICIAL BERGAMOT FOR SOAP is sold at \$2.50 per pound.

VAN AMERINGEN-HAEBLER, INC.
315 FOURTH AVENUE NEW YORK, NEW YORK

Eye Appeal + ENDURANCE



The MODERNE

LOCK-TOP

LIQUID SOAP DISPENSER

LIST OF PRODUCTS

LIQUID SOAP
DISPENSERS
LIQUID SOAPS AND
BASES
OILS, SOAPS AND
LIQUIDS
DISINFECTANTS
INSECTICIDES
WAXES AND POLISHES
DEODORIZING
BLOCKS
CONTAINERS
AND ALLIED
PRODUCTS

... and we nearly forgot to mention
Moderne's important purse appeal.

The Moderne is merely one model in the
complete precision line.

NOTE: Ask about our new service that
will boost your dispenser sales way up.

AMPION CORPORATION

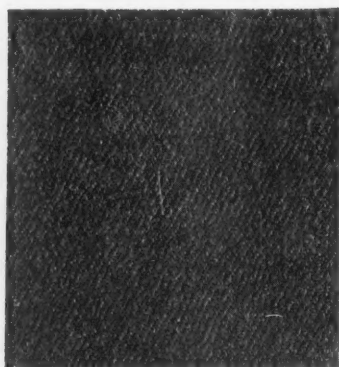
4-88 FORTY SEVENTH AVE.
LONG ISLAND CITY, N. Y.



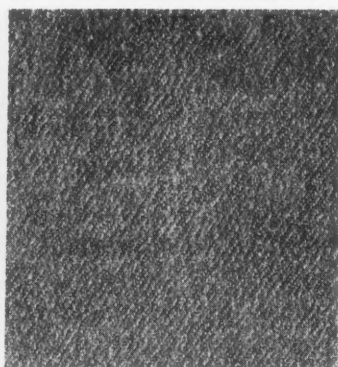
... BUT WILL IT DO A CLEANING JOB?

Comparative washing tests prove conclusively that soap *plus* VICTOR TETRASODIUM PYROPHOSPHATE gets results where soap alone fails. See below.

WASHING TESTS PROVE SUPERIORITY OF TSPP-BUILT SOAPS



**SOILED SAMPLE
PRIOR TO WASHING**



**SOILED SAMPLE WASHED IN
PURE SOAP**
(Conc. 0.30%)



**SOILED SAMPLE WASHED IN
85% SOAP + 15% TSPP**
(Conc. 0.30%)

"BIG 3" USE TETRA BECAUSE IT HELPS SELL SOAP

Today . . . the three leading brands of powdered soap *all* contain TETRASODIUM PYROPHOSPHATE . . . because "TETRA" helps sell soap. TSPP gets the kind of results housewives want,—cleaner, whiter rinsing clothes plus a 20% to 30% saving in soap. It's as gentle on the hands, too, as the purest soap! Why not let this amazing new builder give *your* soap a boost to bigger sales . . . as it has for others? Send today for Research Bulletin "The Function of Tetrasodium Pyrophosphate in Soap Mixtures."

Victor Chemical Works, 141 W. Jackson Blvd., Chicago, Ill.
HEADQUARTERS FOR PHOSPHATES

VICTOR

**TETRASODIUM
PYROPHOSPHATE**

**TETRAPOTASSIUM
PYROPHOSPHATE**
(For Liquid Soap)

TEXACO CONTAINERS POUR 'QUICK-N-EASY' WITH **POUR-N-SEAL** CLOSURES !

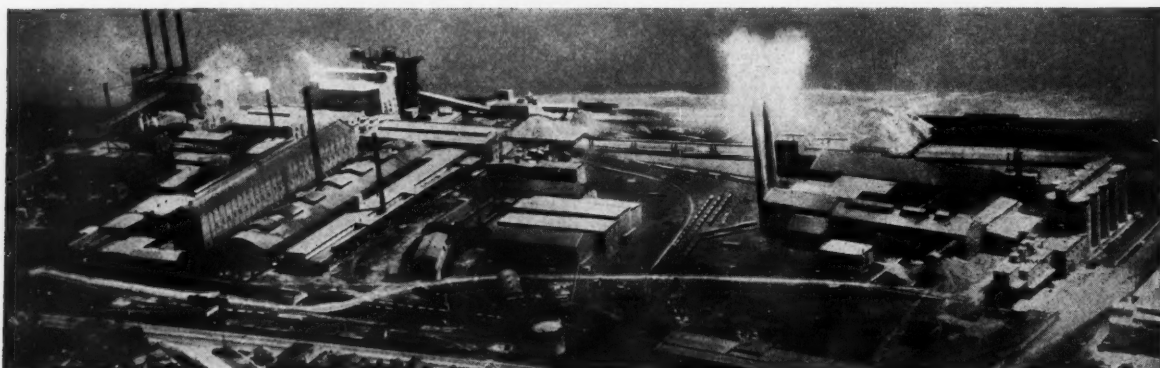
Texaco Capella Oil and Texaco Marine Motor Oil may now be poured off in a full stream or a tiny trickle — thanks to POUR-N-SEAL, recently adopted for these important specialties. ♦ And, of course, POUR-N-SEAL makes a grand re-seal. It is made by **Williams Sealing Corporation, Decatur, Illinois** — a division of *Crown Cork and Seal Co.*



Where Wyandotte Industrial Chemicals are Manufactured



• Here are the North (above) and South Plants of the Michigan Alkali Company, home of Wyandotte Chemicals — spread over 300 acres along the Detroit River, with 50 salt wells, 42 miles of pipes, a railroad, lime-kilns, coke plant, docks, and dozens of constantly active chemical units — the source of hundreds of thousands of tons of alkalis each year.



• For more than 50 years, Michigan Alkali salt wells at Wyandotte, Mich., have been pumping brine to make Wyandotte Soda Ash. Michigan Alkali's own ships, plying the Great Lakes, bring limestone and coal to help produce basic chemicals needed in scores of industries.

Production of Wyandotte chemicals is continuous — the fires in several of the Michigan Alkali plants have been burning steadily since 1901. New products are constantly being developed. Wyandotte Research

and Technical Service are becoming increasingly important to Michigan Alkali customers.

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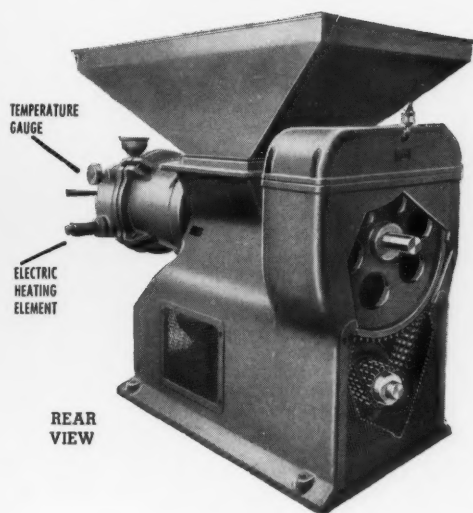
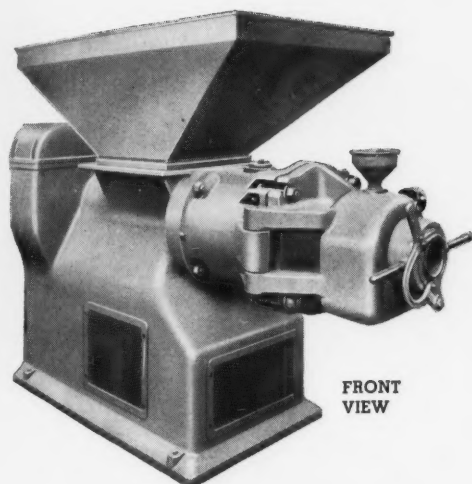


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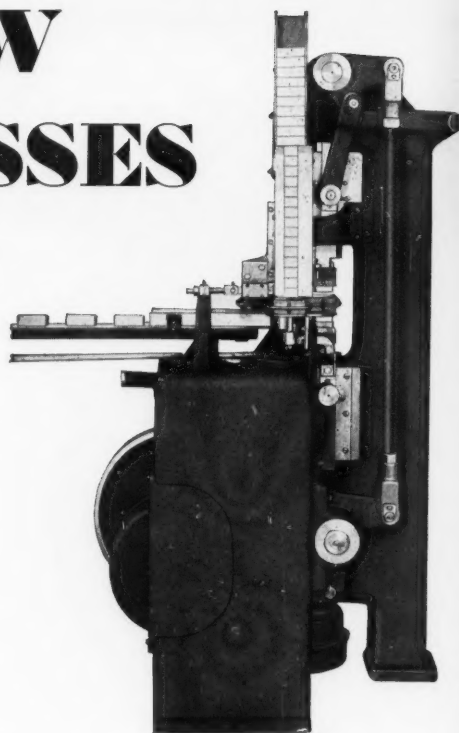
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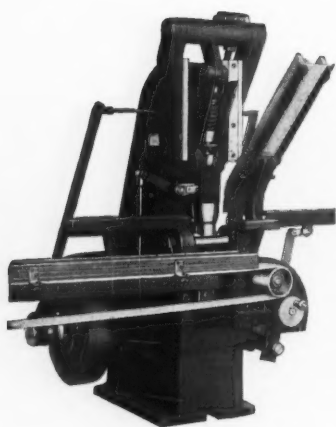
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AS THE EDITOR SEES IT

IN THIS everlasting controversy between salesmen and their employers as to who does most of the gypping and how and why, we have received a long communication from a salesman of soaps and janitor supplies with a record of twenty years in the business. He cites cases and names to show that the average salesman is more often the victim of an unscrupulous employer than vice versa. He quotes from one of our recent issues on the subject of men going to work on a commission basis and then after building up a territory, being replaced with other men who work for salaries much less than the commission rate. In all, he paints a rather dirty picture of a half-dozen rather well-known firms in and about the soap business.

But on the other hand, we can point to hundreds of salesmen who have been with single firms in this field for ten, fifteen and twenty years, and who continue in their satisfactory relations year after year without change. No one can place his finger on any one cause of employer-salesmen disagreements in any line of business. It takes all kinds to make up a world, honest, dishonest, and just plain gyps, and we imagine that they are probably just about equally divided between the salesmen and the employers.



JUST a word of warning to our friends in the export markets, particularly those in Latin America who have expanded their purchases in the United States materially during the past year or so. The in-

crease in export business from the United States has attracted the inevitable number of fly-by-nights, those who have rushed into the export field for quick profits and will rush out just as quickly when the boom is over. But while they are with us, the amount of harm which they can do is tremendous. They can and will victimize Latin American firms by misrepresentation and shoddy merchandise. They will injure the reputation of all American exporters in Latin America or wherever else they may operate.

And so this warning,—if the firms with which you contemplate doing business are not ones with which you have dealt for some years, or about whose integrity and reputation you are certain, view them with suspicion. New firms may be perfectly reputable, but it is a good policy to make certain before you place yourself in a position where they may take advantage of you. Fly-by-nights are more plentiful today than for many a year, so be guided accordingly.



WHEN the experts disagree, then what? Before the recent meeting of the Association of American Soap & Glycerine Producers, two of America's leading authorities on oils and fats presented their views on the world situation in these materials. Particularly of interest were their opinions of what would happen in the fat and oil markets in the event of peace in Europe,—and the fact that they did not see eye-to-eye in looking ahead.

In the event of peace abroad, there would probably be a tendency for prices to rise,

according to one expert. This, he explained would result from a demand from fat-starved Europe,—a tremendous fat-vacuum to fill which their own disjointed fat producing facilities would not be able to handle for many months. On the other side is the opinion that prices would sag because the fat shortage of Europe would be filled quickly from tremendous accumulations elsewhere and from their own fat producing facilities which have not been put out of commission by the war.

These, expressed very briefly, represent the sum and substance of two expert views. Because of the source of the opinions, we would not even guess which might be right and which wrong. For the soap maker, it is strictly a case of "you pays your money and you takes your pick." But between now and whenever the conflict abroad may end, we know from observations of some years that if we had a soap factory, we would not let ourselves run short of any kind of oil or fat,—and particularly so in the light of present low prices.



WHY all the big rush on Army and Navy bids and contracts for liquid soaps, disinfectants, and the like? Why this sixty and ninety day requirement in contracts,—and for quantities of materials five and ten times as great as any heretofore placed? That the big hurry-up and the large quantities involved have the soap specialty manufacturers by the ears is quite obvious. They are all excited and there is much talk of subletting contracts, plant capacities, meeting specifications, and the like.

The demand for fast action in filling these contracts is, as far as we can see, unnecessary. That the products in question are required in anything like the quantities ordered for immediate consumption cannot be the case. Then why the speed, speed, speed? Why ship the materials to Army and Navy warehouses to stand for a year or two before they are used? Why not purchase with less

accent on haste and more on buying advantageously? Is it just a part of the mad whirl of Government buying in preparation for war, or is there another reason behind the demand for speed.

If soaps and disinfectants were shells, guns or tanks, we could see a reason, but knowing how and when soaps and the like are used by the Army and Navy, the motive for haste in delivery of such tremendous quantities is not apparent to us.



OF ALL the synthetic fatty acids which can be and are made from petroleum, there is perhaps only one which the soap industry looks upon with a new and pointed interest at this time. That is lauric acid, the glyceride which is characteristic of coconut and palm kernel oils. This is the one glyceride or fatty acid which is essential to soap manufacture and comes wholly from oils produced outside of the United States. If, conceivably, the Philippines were shut off from us by war, this is the only essential soap kettle ingredient which American soapers would not be able to obtain. With the mad march of events which has taken place over the past year, such is distinctly a possibility. So much of a possibility is it that reserve stocks of coconut oil in the hands of larger soapers are reported to have been increased sharply during recent months.

With this background, the more or less desultory manufacture and development of synthetic fatty acids in the United States over the past five years takes on added importance, particularly the synthesis of lauric acid and those close to it chemically. For an American soap industry shut off from coconut oil or its fatty acids would, based on present standards of production, be a greatly hampered industry. And it is interesting to note also that for practically all oils and fats used in the American soap kettle, the current stocks stand at an all-time high. The single and outstanding exception is coconut oil.

Two Views on the FAT OUTLOOK



O. E. JONES
Swift & Company

A REVIEW of the present fats and oils situation requires an examination of prospective supply of each of the leading fats and oils.

Lard stocks on October 1, 1940, were 150 million pounds over the figure for the previous year, and the heaviest for that date in history. But the decline of 8 per cent in the spring pig crop of 1940 and 12 per cent in the fall pig crop of 1940 indicates a decline in hog slaughter for the year ending September 30, 1941, of about 10 per cent. This coupled with the probability of a decrease in lard production per hog means that total federally inspected lard production should be about 15 per cent below last year.

In view of the war the current export situation is, of course, not promising. The British blockade of Europe has meant the loss of most of the foreign market. The United

Based on addresses by O. E. Jones and N. N. Dalton, before Association of American Soap and Glycerine Producers, Jan. 10, at New York.

Kingdom, in the past the most important outlet for American lard, has, under the necessity of conserving dollar exchange, largely substituted cooking fats made from whale and vegetable oils for imported lard. At present, therefore, our export market for lard is confined largely to countries in the western hemisphere. In view of the foregoing it is doubtful if lard exports will be much over 175 million pounds, a decline of 25 per cent from last year.

The following figures sum up the lard situation:

	Pounds
Stocks October 1, 1940.....	236,000,000
Estimated Production Year Ending 9/30/41	1,300,000,000
Estimated Total Supply Year Ending 9/30/41....	1,536,000,000
Estimated Exports Year Ending 9/30/41.....	175,000,000
Estimated Domestic Supply Year Ending 9/30/41....	1,361,000,000
Possible Domestic Consumption Year Ending 9/30/41	1,150 to 1,200,000,000
Possible Carry-over October 1, 1941	160 to 210,000,000

Stocks of cottonseed oil on October 1, 1940, were down 98 million pounds from the year previous but a cotton crop of about 12.7 million bales means an increase in cottonseed oil production of about 100 million pounds. The total supply available will, therefore, be little changed.

Soybean oil on hand October 1, 1940, was 32 million pounds higher than the year previous. Production will be slightly lower, with the almost complete loss of the export market for soybeans offsetting the decline in domestic production. Thus

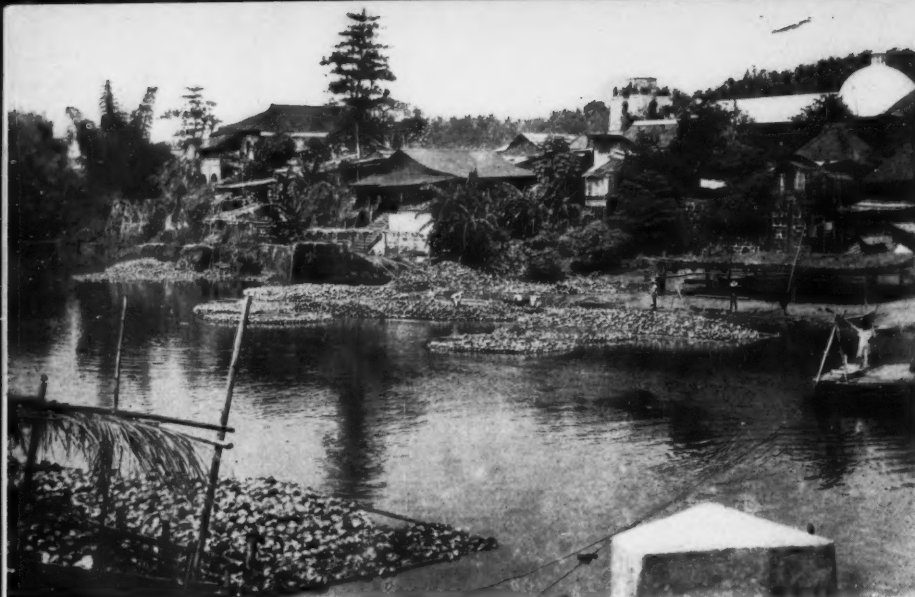
the total supply should be only slightly greater than a year ago.

Stocks of tallow on October 1, 1940, were at their all time peak for that date, 314 million pounds, or over 30 million pounds higher than the year previous. Tallow production will probably be about the same as last year, about 780 million pounds, if the government estimate of little change in cattle slaughter proves correct. Total supplies for the year will thus be larger by approximately the amount of the increase in stocks.

Grease stocks on October 1, 1940, were also materially higher, totaling about 120 million pounds for all kinds, over twice the amount on hand in each of the two years previous. But production is expected to be down materially because of lower hog slaughter, although the decline may be checked some because of the inclusion of some rendered hog fat in the soap kettle, fat that in previous years might have been sold as lard. The heavy stocks thus may be expected to cause the total supply to be slightly greater than last year.

Stocks of linseed oil at 115 million pounds were about the same as they have been for the two years previous. But the estimated U. S. production of flaxseed for the current year is the largest since 1924, and is more than equivalent to total crushings of both domestic and imported seed in the previous year. This will result in a greatly increased production of linseed oil. Supplies consequently will be up sharply.

Stocks of fish and marine animal oils on October 1, 1940, were 174 million pounds, a decline of nearly 50 million pounds from the previous year. We have no reliable estimates of fish and marine oil pro-



The possibility of war in the Pacific—cutting off imports of Philippine coconut oil—is the main threat to the soap maker's supply line as he faces 1941. Photo of copra rafts, courtesy American Chamber of Commerce of the Philippines.

duction but the total amount has varied little in recent years. The effects of the war will no doubt be strongly felt here. The total supply is, therefore, likely to be down for the year because of the material decrease in the stocks on hand.

THE supply picture for all fats and oils may be summed up as follows: Stocks of all fats and oils, excluding butter and uninspected lard, on October 1, 1940, were at their all time peak. Over 2 billion pounds were on hand, an increase of 15 per cent over the year previous. This was due almost entirely to the large increase in the stocks of animal fats. The total of vegetable oil stocks was little changed, the decline in the cottonseed oil on hand about balancing increases in soybean oil and palm oil stocks.

Domestic production of all fats and crude oils, for the current year ending September 30, 1941, excluding butter and uninspected lard, is expected to be about the same as last year, and according to our estimates will again total slightly over 6 billion pounds. Production of crude vegetable oils will be about 9 per cent over last year. The decline in animal fat production will about offset this increase. Domestic production of soap fats and oils for the coming year is likely to be somewhat lower than last year. This will be more than

offset, however, by the heavy carry-over stocks.

Imports of fats and oils for consumption for the year ending September 30, 1941, which reached a peak approaching 2 billion pounds in 1937 and declined to about 1 billion pounds in 1940, will probably show little change in the current year. So long as prices of domestic fats continue around the relatively low levels of recent years, no material increase in imports seems likely.

The Western Hemisphere is nearly self-sufficient in regard to fats and oils, the net import requirement amounting to 2 per cent or less of total consumption. But there are substantial deficits in certain essential items, most of which come from the Far East. If the British blockade of Europe continues, large quantities of such items as palm oil, coconut oil and copra, and flaxseed may come to the United States market. But the extent of this influx will no doubt be limited by the existence of continuing large supplies of domestic fats and oils.

Total supplies of all fats and oils in the United States for the current year ending September 30 are expected to be slightly larger than for the year previous. Although little change is probable in domestic production or imports for consumption, the increase, primarily of animal fats, in the stocks on hand October 1, will make the total supply available

greater. Of the leading individual fats and oils the greatest increases are likely in peanut oil and linseed oil due to greater production, in tallow due to increased stocks, and in coconut oil, palm oil, and tung oil due to somewhat larger stocks on hand, and the possibility of some increase in imports for consumption.

A brief analysis of Census figures on consumption of fats and oils in soap indicates that over recent years use of foreign fats and oils has declined due partly to the increased production and lower prices of domestic fats and oils in recent years and partly to the imposition of excise or processing taxes on many foreign oils. Most of the decline has occurred in palm oil and imported fish oils, with domestic fish oils and tallow being substituted for them. Figures from the Department of Agriculture, however, indicate that the "lauric-acid" oils, coconut, palm-kernel, and babassu, continue to constitute 22 to 24 per cent of the total fats and oils in soap. The imported oils are relatively minor in comparison to the use of such domestic items as tallow and grease.

Domestic demand for fats and oils is expected to be considerably stronger in the current year, due to increased industrial activity generated in large part by the national defense program. Demand for drying oils should be directly stimulated by the speeding up of building activity; and demand for food, soap,

and other fats and oils should also be stronger as a result of increases in national income and consumer purchasing power.

Prices of most fats and oils in recent years have tended downward under the influence of increased supplies, the loss of export markets and the relatively low level of consumer purchasing power. In spite of the heavy stocks of fats and oils now on hand and the uncertain state of foreign trade, some improvement in prices seems likely during the current

year ending September 30. Increasing industrial and building activity provides a fundamental element of strength. Declines in the spring and fall pig crops of 1940 and an indicated decline in the spring pig crop of 1941, are signs of a turn down in animal fat production.

The possibility of regaining foreign markets for animal fats and oils is another important factor. An end to the war, regardless of who is the victor, may open, at least temporarily, a strong foreign market for

fats and oils. But that this foreign demand may be only temporary is a distinct possibility. The Department of Agriculture has this to say of possible trend of American exports:

"On the basis of all available indications it seems fairly safe to say that over the longer period the trend in exports of animal fats and oils from the United States is likely to continue downward. World productive capacity for vegetable fats and oils is now at a high level and promises to increase further in the future."

WHEN the production and world movement of commodities is throttled for even short periods of time almost anything can happen. Trade routes change, new industries are born, and the results persist through many years and in many cases become permanent. Insufficiency of domestic fats during World War I resulted in an increased importation of fats and oils, some of which, though not widely used in this country prior to 1914, have since become an essential part of our total fat consumption.

Imports of coconut oil and copra which increased from less than one hundred million to over six hundred million pounds annually (oil and copra equivalent) from 1914 to 1918, reversed a normal westbound movement through Suez and Atlantic ports, to an eastbound movement from the Pacific Islands to the United States, greatly expanded both the domestic and Philippine copra crushing industry, and made possible such notable advances in the type and quality of soaps that our domestic consumers would now find it exceedingly unsatisfactory if not impossible to meet modern washing requirements without these new and improved products.

Soya beans were, prior to 1914, of negligible importance as an American crop. During World War I our imports of soya bean oil increased from less than twenty to more than three hundred million pounds annually. After 1918 the importa-

N. N. DALTON *Amer. Soap & Glycerine Producers*

tion and use of soya bean oil died abruptly, while the importation and use of coconut oil continued, one important difference being that whereas coconut oil had proven itself extremely valuable to soaps, the physical and chemical characteristics of soya bean oil did not at once fit well into either edible or industrial needs. Nevertheless, the use of soya bean oil during the World War I started technological developments which gradually brought that oil, too, into specific uses, with the result that its potential values became well known. Hence, when another fat scarcity, resulting from the drought years and crop control of the early thirties, arrived simultaneously with an expansion in soya bean plastics, it was evident that the soya bean had come to stay. Today, a large domestic industry has been built around it.

Central and South America have vast untapped forest areas which can yield, in addition to drying oils and coconut oil, many oils like babassu and coquita which are similar to coconut oil. In case there were prolonged interruption of oil imports from the Far East, such a situation might encourage the economic planting and gathering of these products and thereby make the Western Hemisphere an important world source of tropical and semi-tropical fats.

Chemical synthesis of air, water, coal, petroleum, and natural

gas, has since the last World War produced a wide variety of compounds, many of which compete with natural soap fats, glycerine, and soap itself. Research chemists estimate as available today over two hundred thousand chemical products which were totally unknown in 1914. The stress of present war conditions will cause another upsurge in chemical research, yielding many more new products. Some of these may compete further with our present raw materials and finished products, many will be discarded as uneconomic in peacetime, but technology must be viewed as a growing factor in any long range view of our business of soap making.

A nearby market outlook, while more tangible, cannot be separated from the uncertainties of world fat production and consumption, availability of coconut oil imports, and export movement of domestic edible fats, soya beans, and oilcake. It is apparent that edible and soap making fats have been overplentiful and cheap for many months, and it is assumed that foresighted buyers have accumulated comfortable stocks of both imported and domestic fats. The recent advances in fat values were not unexpected and seemed overdue. Whether the present market will change much in the near future depends largely on the two possibilities of exports reducing domestic stocks, and shipping difficulties restricting our normal imports.

The holding back of soya beans and cottonseed by farmers in

the hope of better prices, the unfavorable corn-hog ratio, a problematic whale catch in 1941, recent buying of lard and coconut oil by Russia and Japan, and the recommendation of our Department of Agriculture that farmers raise more hogs in 1941 on account of an expected 15 per cent reduction in supply, all indicate some soundness in present values. However, cottonseed and soya beans now held back will eventually reach the market, a small whale catch leaves more whales in the sea, licenses or blockade may restrict exports to Russia and Japan for suspected German destination, and farmers do not increase hog production unless they think it is going to be profitable.

From a world production viewpoint it is probable that prolonged low prices due to inaccessibility of markets has curtailed production in many non-war areas. The "press" reports that copra is rotting in the South Sea Islands and this may apply to other oil producing areas until Europe can again take fats, fat-bearing material, and oilcake.

The blockade of oilcake imports to Europe has prevented proper feeding of livestock for dairy products and is compelling the slaughter of herds for immediate meat and fat necessities. Continental Europe, normally the greatest concentrated fat importing and consuming area in the world, with a population of over three hundred million, is probably now rationed on fats and soap to less than one-fifth of what we, in this country, call a normal consumption.

Consumption that has not taken place is "gone with the wind," and fats that rot at point of origin will never reach the consumers. This situation does not indicate any immediate deficiency in world fat supplies, but the longer it prevails the greater will be the world fat vacuum to fill when hostilities cease.

UP to the present time our fat markets have followed the pattern of World War I on a lower scale of values. In World War I tallow remained in the 6c to 7c range through 1914 and

1915, gradually advanced to 11c in December 1916, went to 17½c in 1917, hit a high of 19c in 1918, dropped to a 9c to 10c level early in 1919, hit a second high of 19c in July 1919, and then declined gradually to 5½c by the close of 1920. Coconut oil does not offer a good comparison because it was at 9c in 1914 and our imports from the Philippines expanded constantly from 1914 to 1918. Advance in price was more gradual than that of tallow and reached a high of 18.80 in January 1920.

Leading brands of soaps held at stable prices through 1914 and 1915, advanced 10 per cent to 15 per cent in 1916, 30 per cent more in 1917, another 15 per cent in 1918, approximately 10 per cent in 1919, holding there through most of 1920. Soap prices did not increase in ratio to tallow advances, both on account of the fat inventory position of soap makers and the rapid rise in glycerine values which tended to retard rising soap costs.

That our fat and soap markets have so far approximately paralleled their course in the first World War does not warrant any conclusion as to their future movement. Today all of Continental Europe is blockaded, whereas in World War I fats moved with comparative freedom to Allied and neutral ports. Hence, the current deficiency in world consumption is greater than in World War I, and will continue so unless the blockade is lightened or it becomes possible to move fats to Europe through Asiatic or Mediterranean ports. The practical elimination of Continental Europe from world fat economy leaves the balance of the world with the excess production that Europe normally uses.

Glycerine (80 per cent crude), more sensitive to war conditions and peace prospects than fats, sold at 13c to 14c per pound through 1914, advanced rapidly in the latter part of 1915, reaching 41c in November, fluctuated between 24c and 41c through 1916, hit a high of 51c in October 1917, held fairly well through the early part of 1918, but

dropped sharply to 10c after the Armistice.

In our present situation the relationship of glycerine to war conditions is harder to appraise than that of fats. The production and exportable surplus of Europe must be eliminated from all calculations, as it was in World War I, but the technological changes in both glycerine production and consumption have been very extensive. We have a current domestic production four times that of 1914, and this production is normally in excess of domestic consumption, in addition to which we have an unavoidable import movement of varying volume. The excess of production, plus imports, has forced us to a continuous search for new uses.

Strangely enough, but due to occasional temporary scarcities of glycerine, some of the best equipped research laboratories in the country have for several years looked upon the development of glycerine substitutes as a major objective. Glycerine would undoubtedly have been hurt more by these efforts were it not for its valuable inherent qualities, and its economic position as a by-product.

The attempts at the substitution of glycols for glycerine in industrial products, the partial replacement of nitro-glycerine by nitro-glycol and ammonia powders in peace time explosives, the decline of dynamite as a war propellant, and the substitution of diethylene glycol for glycerine in a few tobaccos, have been accompanied by increased and diversified glycerine consumption in many old and new uses. Synthetic resins, transparent wrappings, and many other products that use glycerine were unknown in 1914. Thus, while many of the new chemical products not known in 1914 are potential competitors of glycerine, many others turned out to be good users of glycerine, and the habit of most chemists in turning instinctively to glycerine as a possible corrective for whatever ails their product continues to uncover new applications.

(Turn to Page 66)



LIQUID TOILET SOAP

(PART II)

By Dr. C. A. Tyler

THE most practical method of production of liquid soap from the point of view of size of equipment as well as other factors, is to make a 40-42 per cent concentration of soap, whether this concentrate is to be sold as such or whether the manufacturer sells it in diluted form. The concentrate is easily prepared in a closed-coil steam kettle, a steam-jacketed kettle, or in a crutcher. Some prefer to introduce the alkali into the kettle first, warm to about 140° F. and add the oil very slowly with active stirring. This is theoretically the best procedure although the vast majority of soapers warm the oil, then introduce the alkali slowly with stirring.

In the usual method in which the caustic is added to the oil, an

initial dispersion throughout the oil of droplets of caustic solution occurs. At some point an inversion takes place to oil droplets distributed in the aqueous phase. This inversion cannot actually be seen but the mass becomes very thick, then thins up after the phase inversion has occurred.

On the other hand with the addition of oil to alkali, the initial lag in the reaction is avoided as well as the phase inversion. This method is believed by its advocates to give better control. Since the saponifica-

tion reaction is exothermic, heat is produced and there is always danger of the kettle suddenly boiling over. Because of this the second ingredient should be added slowly—only at a rate at which it will react. If the contents start to rise too high, they can usually be subdued by a quick hosing with cold water. An allowance in capacity must be made to permit the possible rise of the contents in the kettle. After 90 per cent of the oil or alkali is added, further addition must be made very carefully so that the kettle will not boil over and so that an excess of one ingredient will not be added. Saponification of a coconut-oil soap should be complete in about three hours of active boiling. Soaps made from other liquid oils such as straight corn oil or olive oil,

Above: Sun-drying copra in the Philippines. At least three-quarters of all liquid toilet soap is manufactured from straight coconut oil.

usually require upward of eight hours' boiling.

The appearance of the soap serves as a rough guide as it clears up when saponification is complete. Before leaving the kettle, the soap should be tested and should be noticeably alkaline to phenolphthalein when hot; a sample removed and allowed to cool should be slightly alkaline to phenolphthalein. The color given under the two conditions enables the experienced worker to judge the degree of alkalinity with fair accuracy. If the soap fails to give an alkaline reaction more caustic should be added, with further boiling. If too alkaline, a small amount of good-quality red oil is added and the boiling continued. Boric acid, used by some soapmakers, is not recommended for neutralizing excess alkali because of the low pH of the solution of borax formed. The hydrolysis alkalinity of the salt is considerably less than that of soap. Red oil will of course form more soap.

While the general aim is a neutral soap, it is better to err slightly on the side of alkalinity. The experienced soaper can usually tell roughly by taste how much free alkali is present. An excess of fatty acid is most decidedly to be avoided as it leads to turbidity and to development of rancidity. If the plant possesses a laboratory, the soap sample is titrated with standard acid to determine the amount of free alkali, or with standard alkali to determine the amount of free fatty acid. Standard solutions can be purchased already made up. The plant workman can be taught their use, a trained chemist is not needed to make simple titrations.

From the kettle, the soap is pumped to storage tanks to cool and to age, which permits any unsaponified fat to separate, and unsaponifiable matter, calcium and magnesium soaps, and dirt to settle to the bottom. Some soapers allow a day or two for this, while others allow several weeks. An aging period is desirable to permit maximum settling of insoluble material, and is usually emphasized in making high-quality

shampoos. If a long storage period is used, the soap should again be tested for neutrality so that any adjustment needed can be made in the refrigerating tank.

Clarification of the Soap

SOME manufacturers make liquid soaps without refrigerating or filtering, simply drawing it from the storage tank into the containers in which it is sold. Others filter but do not refrigerate. A clear concentrate does not seem to be difficult to prepare, but unfortunately this too often becomes turbid on dilution, which may put the manufacturer who sells the concentrate in a bad spot.

The small manufacturer may be inclined to think that refrigerating and filtering equipment represent an unnecessary expenditure, but those who have tried them believe that they pay for themselves in the long run. Refrigeration and filtration are interrelated, since if the liquid is to be filtered, a preliminary refrigeration will give maximum separation of removable solids.

Substances which may be expected to cause turbidity are potash soaps of the higher fatty acids, sodium soaps, traces of calcium and magnesium soaps, and unsaponifiable matter. This brings up the question of the composition of coconut oil, which is roughly as follows:

	Per Cent
Lauric and lower fatty acids	66
Myristic acid	20
Palmitic acid	7
Stearic acid	5
Oleic acid	2
Unsaponifiable matter	0.2

Chemists usually think of coconut oil as consisting very largely of the glyceride of lauric acid, but the figures show a fair proportion of higher acids. Solubility diminishes rapidly for saturated acids with an increase in the length of the carbon chain. Potassium laurate is extremely soluble for a soap, so is potassium oleate. The high solubility of the latter can be attributed to the effect of the double bond. It is probable that the solubility of potassium palmitate and stearate will be exceeded even in a 15 per cent soap, since more than 10

per cent of the actual soap consists of these two fatty acids. Such solubility figures as can be found are for the solubility of pure soaps in water in the absence of glycerine, so they do not apply here. Experienced soap makers find that these higher fatty-acid soaps do precipitate, but only very slowly.

Solubility figures taken from the International Critical Tables for calcium and magnesium soaps suggest that small amounts of these will cause trouble.

Soap	Solubility in grams per 100 grams of water at 25°C.
Magnesium laurate	0.009
Magnesium stearate	0.004
Magnesium oleate	0.024
Calcium oleate	0.040

Although the figures are for pure aqueous solutions, they give some idea of the approximate solubility of these components in liquid soaps. The latter of course contain a few per cent of glycerine,—in the case of 40 per cent soap, about 5 per cent of glycerine is present.

Although coconut oil is relatively low in unsaponifiable matter, 1000 pounds of oil would give two pounds of unsaponifiable material.

To return to refrigeration,—the liquid is diluted with the proper amount of water as it is introduced into the refrigeration tank to give the desired concentration, such as 10, 15, 20 or 30 per cent. Much of the soap sold on specification is 15 per cent. If the plant has a laboratory the content of anhydrous soap is determined by titration of a sample with standard hydrochloric acid. Otherwise the soaper sends his sample to an outside laboratory or depends on his calculations from the amount of raw materials used and the saponification number of the fat, as explained above. Some salesmen offer to demonstrate the content of anhydrous soap in their product by adding a few cc. of sulfuric acid to a sample of soap in a graduated cylinder. The volume of fatty acid which separates is used to calculate the soap content. This method is too crude to be useful to the manufacturer, but can be used to show wide differences in soap content.

When refrigerating, the liquid is cooled to about 32° F. and held between this figure and 40° for at least 24 hours and preferably 48 hours. Considerable sludge will precipitate from a 15 per cent soap at this temperature. Liquid soaps appear to be subject to supersaturation. This difficulty is usually met by "seeding" the liquid, which is done very simply indeed by merely leaving a residue in the refrigeration tanks from previous batches.

After refrigeration, the soap goes directly to the filter press for the removal of matter precipitated at 32° F. If filtration is carried out while the liquid is cold, the precipitated material will be removed, but it redissolves slowly on coming to room temperature. Some manufacturers cool their filter units, thus making sure that no precipitated matter redissolves before it is removed by filtration. Refrigeration may increase the alkalinity slightly by precipitating free fatty acids, but it will never reduce the alkalinity. Diatomaceous earth is generally used in filtering as an aid in increasing the efficiency and speed of filtration.

Without refrigeration and filtration, liquid soap is almost bound to develop turbidity. If the soap is to be used in glass or other transparent dispensers a poor appearance will prejudice users against it. More important, the solids present will stick to the walls of the container and worse yet, clog up dispenser outlets. This requires more servicing and creates general dissatisfaction. Modern liquid soaps should be clear and bright.

From the filter press, the liquid can be run or pumped directly into containers. These are the ordinary 55 gallon steel drums or gallon tin cans. Sometimes a fine-appearing soap put into clean drums has been found later to have become dark and discolored. Supposedly a small amount of free fatty acid has been liberated and attacked the steel, with the formation of iron soap. This is one of the important reasons why the liquid should be so adjusted as to contain 0.05 per cent of free alkali.

Salts present in the soap to the extent of 0.2-0.3 per cent greatly accelerate attack on iron. At least one manufacturer has overcome this difficulty by using drums coated on the inside with a baked vinyl resin. This costs an extra 40-60 cents per drum. If the drums are returnable, the extra cost can be spread over a number of refills.

Coconut-oil soap develops its own characteristic odor, which may or may not be considered objectionable. Most manufacturers add perfume because it is demanded. The perfume should be such as to leave no odor of its own on the hands. The present demand is for a liquid soap without too much odor. Perfume ingredients such as geraniol, bergamot, citral, diphenyl oxide, etc., are mixed to suit, but safer practice is a compound especially bought for the purpose. About a pound per drum is used, and can be added to the soap in the drum with subsequent mixing. An "odorless" soap may contain a blend of citronella or lemongrass. Users think that if a soap lacks a "sweet" odor, it contains no perfume. For example, Ivory soap is described by most users as odorless, although it contains a cover odor made of a blend with citronella character. Certified water-soluble dyes may be added with perfume if desired.

A Federal Specifications Board has taken over the preparation and issuance of specifications for all government departments. Formerly the army, navy, marine corps, post-office department, etc., each issued its own specifications, but these are now all combined in one: "Liquid toilet soap shall be of but one type."

Federal Specifications P-S-618 for liquid soap call for a product of good quality with a minimum anhydrous soap content of 15 per cent. The liquid shall be "a clear solution of pure vegetable oil potash (or potash and soda) soap with or without glycerol or alcohol, suitably perfumed, and free from all foreign matter. It shall quickly form a satisfactory lather and have no injurious effect and leave no objectionable

odor on the skin." Other requirements are:

	Per Cent
Total anhydrous soap, minimum	15
Matter insoluble in alcohol, maximum	0.5
Free alkali, maximum	0.05
Chloride calculated as potassium chloride, max.....	0.3

"More than traces of sulfates and sugar shall not be present." At one time sugar was frequently added to liquid soap. Since it contains hydroxy or alcohol groups it increases solubility. The method of determining anhydrous soap in the specifications excludes glycerine. If anyone calculates anhydrous soap content as soap plus glycerine, he is in error.

There is no specification for the amount of unsaponified or unsaponifiable matter. The determination of soap as outlined in the specifications includes any mineral oil and neutral fat, "which, if determined separately, must be deducted from the result to obtain the true soap."

Whether the manufacturer wishes to compete in this market or not the specifications give a standard to shoot at. Their greatest influence has probably been to further the idea of buying and selling liquid soap on the basis of anhydrous soap content. Anyone issuing a guarantee on this should be sure of his ground. A commercial product "guaranteed not less than 43 per cent anhydrous" soap was found on examination in the laboratory to contain only 40.5 per cent of anhydrous soap. The safe procedure is to have a laboratory determination made from time to time so that the manufacturer *knows* what he is selling. An occasional check gives the manufacturer confidence in his methods and his product, and the buyer confidence in the word of the manufacturer.

Sulfonic acids of high wetting, cleansing and emulsifying properties are prepared by condensing a terpene such as pinene with an ether containing an aryl groups such as diphenyl ether, and sulfonating the aryl group. Jos. N. Borglin, to Hercules Powder Co. U. S. Patent No. 2,202,686; through *Chem. Abs.*

Germicidal Activity Of Soaps

A study of the comparative germicidal value of
rosin soaps and soaps of individual fatty acids

By L. S. Stuart and W. D. Pohle*

THE germicidal activity of commercial soaps and the soaps of the individual fatty acids has been the subject of many investigations since Koch (9) first pointed out in 1881 their apparent antibacterial action. A complete critical review of the literature on the germicidal action of soap is beyond the scope of this investigation. Klarman (8) in 1933 published a review of the work done up to that time in which he attempted to gather the widely scattered information found in the scientific, technical and trade journals, and subject it to a critical analysis. This was a monumental task and it provides some fairly concrete conceptions with regard to the germicidal activities of soaps. (Ed. Note. See also "Are Soaps Germicidal," *Soap and Sanitary Chemicals*, Jan., 1941, p. 23.)

There are no reports devoted primarily to rosin soaps or soaps containing rosin, although a few investigators have reported tests on sodium resinate and products bearing the name, at least, of sodium abietate. Others have reported results of tests made on brown bar (11) laundry soaps, which usually contain considerable sodium resinate, and the summation of these reports would indicate a possible germicidal superiority of sodium resinate and soaps containing rosin over fatty acid soaps. Using *Staphylococcus aureus* as a test organism. Walker (17, 18, 19) found sodium resinate to have greater germicidal activity

than soaps of the common acids present in soap oils and fats such as caprylic, lauric, myristic, palmitic, stearic, oleic, and linoleic acids. With the fatty acid soaps, using selected strains of pneumococci and streptococci as test organisms, he found the intensity of the bactericidal action increased with increasing molecular weight of the acid up to lauric acid. Acids higher in the series than lauric produced soaps of less germicidal potency. *Eberthella typhi* was found to be more susceptible to the action of soaps of the saturated acids such as lauric and myristic, occurring in coconut oil, than to soaps of the unsaturated acids. His results with sodium resinate when *Eberthella typhi* was used showed this soap to have an activity only slightly less than that of coconut oil soap at a temperature of 20° C. and equivalent to that of coconut oil soap at 35° C.

The observation by Walker (18) that resin soap was much more effective against *Staphylococcus aureus* than fatty acid soaps, and almost equally as effective as coconut oil soap against *Eberthella typhi*, seems to have attracted no attention.

The germicidal activity of rosin soaps has been given primary consideration in this investigation. Effort has been directed toward the establishment of the relative bactericidal activity of rosin soaps and fatty acid soaps, the determination of the relative bactericidal activities of soaps made from rosin acids found in and derived from rosin and the examination of the factors that may

influence the bactericidal activity of rosin soaps either alone or blended with the fatty acid soaps. This study was undertaken as a part of the investigational program of the Naval Stores Research Division designed to determine the properties contributed to soaps by the soaps of rosin and rosin acids, rosin and modified rosin.

For brevity the term "rosin soap" will be used to designate any soap made from rosin or rosin acids. All soaps made from an individual fatty acid or mixed fatty acid will be designated as "fatty acid soaps." "Soaps containing rosin" will refer to all soaps containing both fatty acid and rosin soaps.

In the past some have considered rosin to be 90 per cent abietic acid. This does not appear to be so (13), and some confusion in the literature has resulted from calling sodium resinate or rosin soap sodium abietate. The term abietic acid will be applied only to the rosin acid formed by acid isomerization of rosin acids and purified by recrystallization of the quarter salt of abietic acid.

Rosins contain 5 to 10 per cent of neutral material (sometimes referred to as resenes) and unless special steps are taken the sodium resinate or rosin soap will contain this neutral material. Rosins may also vary in composition with respect to the various kinds of rosin acids and amounts of oxidized rosin acids present. Sodium resinate will vary, therefore, in composition, depending upon the rosin from which it is made. Since rosin is produced by steam distilling gum obtained from both

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the longleaf and slash pine, rosins made from these two gums will be considered separately. The amount of oxidized resin and rosin acids in rosin depends upon the conditions of collecting and handling the gum and the subsequent treatment the rosin receives. In studying the effect of the presence of oxidized rosin acids on the germicidal activity of a rosin soap, a rosin was oxidized far more than the commercial gum rosins in order that the influence of the soaps of oxidized rosin acids might more easily be detected.

Pyroabietic acid, a stable product derived from rosin, was selected for comparison with normal gum rosin. Pyroabietic acid contains dehydroabietic acid, dihydroabietic acid, and tetrahydroabietic acid (6).

To determine the effects of differences in the structure of the rosin acids on the germicidal activity of their corresponding soaps, rosin acids containing varying amounts of hydrogen in the molecule were studied.

The rosins, rosin acids, derived rosin acids, fatty acids, and natural vegetable oil acids selected for the preparation of test soap solutions are listed together with pertinent information relative to chemical composition, special methods of preparation, collection or source of each selected products as follows:

Rosin Products

Slash Rosin—Rosin from slash pine gum collected in raised clay cups, using aluminum aprons.

Longleaf Rosin—Rosin from longleaf pine gum collected in raised clay cups, using aluminum aprons.

Oxidized Rosin—Longleaf rosin powdered and exposed to air in thin layer for over six months.

Pyroabietic Acids—Prepared from abietic acid by heating to 250° C. and using Pd-C for a catalyst (5).

Dehydroabietic Acid—Separated from pyroabietic, m.p. 170° C.; $[\alpha]_D^{20}$

+61°. (4)

D.

Abietic Acid—Prepared by isomerizing rosin acids with HCl and purifying the abietic acid by recrystallization of the quarter salt of

abietic acid. $[\alpha]_D^{20}$ —87° (12)

D.

Dihydroabietic Acid—Prepared by hydrogenation of abietic acid and purified by recrystallization; m.p.

20

129-131° C.; $[\alpha]_D^{20}$ —3°.

D.

Tetrahydroabietic Acid—Prepared by hydrogenating abietic acid and purifying by recrystallization. Negative to tetranitromethane test for unsaturation.

Fatty Acids and Natural Vegetable Oil Acids

Caprylic Acid—n-Caprylic acid from Eastman Kodak Co.

Lauric Acid—From Wecoline Products, Inc. Acid no. 272-275, Sap. no. 280, Iodine no. 1.5-2.0.

Myristic Acid—From Woburn Degreasing Co., technical myristic acid. Acid no. 237-243, Sap. no. 240-246, Iodine no. 4-13.

Palmitic Acid—Product from vacuum distillation of technical palmitic acid from J. T. Baker Chemical Co.

Stearic Acid—Wecoline Products, Inc. Acid no. 202-203, Sap. no. 203-204, Iodine value, less than 1.

Oleic Acid—Wecoline Products, Inc. Acid no. 199-201, Sap. no. 200-202, Iodine no. 88-89.

Linseed Oil Acids—Wecoline Products, Inc. Acid no. 198-200, Sap. no. 202, Iodine no. 179-182.

Coconut Oil Acids—Woburn Degreasing Co. Acid no. 260-270, Sap. no. 263-274, Iodine no. 9-15.

Palm Oil Acids—Woburn Degreasing Co. Acid no. 196-203, Sap. no. 198-206, Iodine no. 40-55.

DUE to hydrolysis, rosin soaps, fatty acid soaps, and all usual household and toilet soaps give an alkaline reaction in water. Frequently household soaps contain builders. Bar soaps and soap flakes for household use in solutions at concentrations of 0.25 and 0.5 per cent were found to have pH values within the range of 10.0 to 10.4 when tested with a glass electrode (Beckman pH meter). At the concentrations and under the conditions that

toilet soaps are usually employed the pH should be lower than the foregoing figures since hydrolysis of soap decreases as its concentration in solution increases (6).

Some workers (2, 3) have associated the germicidal action of soap with its hydrolysis and contend that the germicidal activity is due to the action of the hydroxyl ion formed. Others (8) have expressed doubt as to the influence of the hydroxyl ion formed by hydrolysis, inasmuch as its concentration is only on the order of 0.0001 N. From the chemical viewpoint it would appear that for strict comparisons as to the relative bactericidal activity of soaps derived from various organic acids, tests should be made within or close to the pH range governed by the dissociation of the alkali salts of the specific acid being studied, and not necessarily at a common pH level.

Experiments run at higher pH values may reflect common cation or hydroxyl ion activity. Tilley and Schaffer (15) have shown clearly that the activity of coconut oil soaps is increased by the action of a common cation. Cade and Halvorson (1) have found a similar action with the alkali salts of certain phenols and the bactericidal effect of the hydroxyl ion itself at relatively high concentrations (pH 12 or higher) is well established (10). Tests run at pH values lower than that characteristic of the alkali salt could be expected to reflect the activity of the aliphatic or rosin acid itself or the combined activity of a lowered concentration of the alkali salt and acid. A scrutiny of the methods employed in previous investigations on the germicidal activity of soap solutions reveals many examples of comparisons made at various arbitrarily selected pH levels outside the pH range characteristic of soaps. The value of such determinations is limited definitely to the specific pH at which they were made. In the absence of data showing the activity at the normal pH of the soap itself, it is difficult to say with certainty how useful the results are for comparative purposes. It is interesting to note that Walker (17, 18, 19), although reporting no pH measurements, pre-

pared his test soaps in a manner (which should have given him pH values) characteristic of the soaps studied. Thus, from a comparative standpoint, the works of Walker deserve special consideration.

Before conducting experiments on soap solutions, the germicidal activity of alkali and some alkaline salt solutions was determined to establish: (1) A knowledge of the resistance of *Staphylococcus aureus* to alkaline solutions; (2) the effect of temperature on the germicidal activity of alkaline solutions; (3) the effectiveness of 5 and 10 per cent alcohol solutions at an alkalinity comparable to that of soap solutions for killing a test organism. These studies were necessary preliminaries to the selection of the most suitable pH and temperature for testing and to provide evidence as to the suitability of methods of compounding test soap solutions.

All laboratory methods employed in the testing of germicides are necessarily more or less empirical. Frequently in vitro method results are expressed as coefficients determined by comparing the time or concentration necessary to completely kill selected organisms with that of an arbitrary standard, such as phenol. It was believed, however, that for direct comparative work with the materials at the concentrations to be studied, an accelerated death time method as employed by Cade and Halvorson (2) for testing soaps and alkaline detergents, or a slight modification of this method, would be more informative. Results obtained with this method are most easily expressed by survival time curves.

In all tests 15 ml. of the solution being studied was pipetted with a sterile pipette into sterilized lipped pyrex test tubes 25 by 150 mm. The tube containing the test material was immediately suspended in a thermostatically controlled constant temperature water bath and the contents allowed to come to the desired temperature. Transfer of the test organisms to the tube was made with a single standard loop. The specifications for this loop are given by Ruehle and Brewer (14). Using the

Table 1.—Germicidal Action of Alkali and Alkaline Salt Solutions at 30° C. against *Staphylococcus aureus*.

Composition of solution	ph of solution	Plate count				
		1	2	5	10	20
H ₂ O (distilled)	6.8	4160	3840	3712	3712	3584
0.85% NaCl	7.0	4106	4160	4106	3840	4160
5% Alcohol (by volume)						
(+ Na ₂ CO ₃)	10.1	3712	3840	3712	3776	3776
10% Alcohol (by volume)						
(+ Na ₂ CO ₃)	10.1	3978	3904	4096	4352	4352
NaOH	10.0	2752	2432	2240	2048	1664
NaOH	11.0	3840	3072	3072	2304	2048
KOH	10.0	4480	3008	2752	2032	1792
KOH	11.0	3072	2560	2486	2496	1408
Na ₂ CO ₃	10.1	2816	2304	2112	1920	1792
Na ₂ CO ₃	11.1	2436	1856	1664	1664	1664
Na ₂ PO ₄ .12H ₂ O	10.0	2752	1920	1472	1152	768
Na ₂ PO ₄ .12H ₂ O	11.0	4096	3136	2752	2048	1664
Na ₂ SiO ₃ .5H ₂ O	10.0	2496	5000+	5000+	2048	1664
Na ₂ SiO ₃ .5H ₂ O	11.0	2560	2496	1984	1664	768

same standard loop, the tube containing the solution being tested and the test organisms was sampled at intervals of 1, 2, 5, 10, and 20 minutes. These standard loop samples were transferred to tubes containing 15 ml. of sterilized nutrient agar maintained at 45° C. This agar was immediately poured into a sterile petri dish and allowed to solidify. As soon thereafter as possible the plates were placed in an incubator for 48 hours at 30° C. Counts were then made using a Quebec colony counting chamber.

The composition of the nutrient agar employed was the same as that specified by Ruehle and Brewer (14) for the maintenance of stock cultures. The test organisms employed were *Staphylococcus aureus*, *Escherichia coli* and *Eberthella typhi*. Prior to use all test cultures were grown in plain nutrient broth for not less than 20 and not more than 24 hours at 37.5° C. The nutrient broth employed conformed to the specifications for plain broth established by the Food and Drug Administration of the U. S. Department of Agriculture for tests to determine phenol coefficients (14).

Preliminary tests with tap water, distilled water and physiological saline indicated that by following the procedure as outlined above the colony density on plates having the maximum number of colonies would not be great enough to introduce a large factor of error in counting when the Quebec colony

counting chamber was employed. In most instances the tests have borne out this indication.

Control plates prepared by the method adopted using *Staphylococcus aureus* gave petri dish population density between 3,000 and 4,000 colonies. This is admittedly a very heavy seeding of colonies, but by employing the Quebec colony counting chamber quite precise counts could be obtained as judged by the ability of the operator to duplicate counts from the same plate.

The results of determinations with water, physiological saline, dilute alcohol solutions at pH 10, alkali and alkaline salt solutions having a pH of 10 and 11, and solutions of sodium hydroxide at pH values of 10, 11, 12, and 13 at temperatures ranging from 20° to 45° C., are given in Tables 1 and 2.

In Table 1 the counts indicate a slight though progressive death rate for the test organism in distilled water over a period of 20 minutes. In 0.85 per cent sodium chloride this slight death rate was not observed. The count after 20 minutes' exposure was as great as that found after a one-minute exposure. The counts in 5 and 10 per cent alcohol solutions made alkaline to pH 10.1 with sodium carbonate were equivalently as large, within the range of experimental error, as those found with 0.85 per cent sodium chloride and showed no progressive decrease with exposure time. It would appear, therefore, that

5 and 10 per cent alcohol in the soap solutions does not have any appreciable direct germicidal action.

The counts for solutions of sodium hydroxide, potassium hydroxide, sodium carbonate, trisodium phosphate and sodium metasilicate at pH 10.0 and 11.0 were, on the whole, slightly lower than those found for distilled water, 0.85 per cent sodium chloride, or the dilute alcohol—sodium carbonate solutions. With the exception of the sodium metasilicate solution at pH 10.0, all of these solutions showed small, though consistent, decreases in counts as the exposure time increased. The rate of this decrease appeared to be, in general, of the same order of magnitude at both pH 10 and 11. It would appear, then, that at 30° C. and these pH values, the alkalies and alkaline builders do exert a direct, though slight, bactericidal action.

The pronounced increase in count with the solution of sodium metasilicate at pH 10 after 2 and 5 minutes' exposure, followed by an abrupt decrease after 10 minutes' exposure is particularly interesting. This phenomenon was observed in repeated tests, and is apparently caused by a dispersing action on the natural grape-like groupings of staphylococci thus making the plate count higher. Microscopic stains made of smears from test solutions at the exposure intervals designated indicate a dispersing action. This suggests that dispersion may be one of the first phases in the killing action of certain alkalies. The high plate counts resulting from this dispersion indicate the empirical nature of the plate counts, since it shows plainly that the initial number of individual cells in the test suspension is actually far greater than the plate counts made from distilled water and physiological saline show.

A similar, though less pronounced and not quite so consistent, observation of this dispersing action with time was found at 30° C. with NaOH solutions at pH 11 (see Table 2). That the dispersing action is also influenced by concentration of alkali is clearly illustrated by the counts recorded by Table 2 at 30° C. and 35° C. for one minute at pH 10, 11,

12, and 13. Here the counts at pH 11 and 12 are much higher than those found at pH 10 and at pH 13 the counts show a marked drop. With the longer intervals of exposure the increased count is only observed at pH 11, whereas with the shorter time intervals it appears at both pH 11 and pH 12.

The experiments on the effect of pH and temperature on alkali germicidal activity show quite clearly that at 35° C. or lower the alkali does not show appreciable germicidal activity unless the pH is greater than 11. At 45° C. a marked germicidal action was observed at all of the pH values. From the results presented in Tables 1 and 2, the selection of a temperature of 30° C. and a pH value of about 10 for comparing the germicidal action of the soap solutions would be expected to minimize or almost eliminate the direct germicidal action of the elevated temperatures and hydroxyl ion.

Soap solutions for testing were prepared from the materials previously tested according to the following procedure:

Two grams of rosin, resin or rosin acid, fatty acid or mixture of fatty acids, was dissolved in 12 ml. of 95 per cent alcohol, 6 drops of

phenolphthalein were added and the solution neutralized with approximately 2 N NaOH to the phenolphthalein end point. This solution was poured into 50 ml. of approximately 0.01 per cent sodium carbonate and then diluted to 200 ml. with 0.01 per cent sodium carbonate. This procedure gave soap solutions with pH values between 10.0 and 10.4. For soap solutions with a pH of 11, 0.2 per cent sodium carbonate was used in place of the 0.01 per cent sodium carbonate. Soap solutions containing 0.5, 0.25 and 0.1 per cent rosin or fatty acids were prepared by diluting the solution containing 1 per cent rosin or fatty acid with the proper amount of sodium carbonate solution.

To determine the influence of 0.01 per cent sodium carbonate on the germicidal activity of soap solutions, tests were made on 0.25 per cent solutions with and without the added buffer. The results for sodium laurate are given in Table 3.

No appreciable difference was found between the germicidal activity of soap solutions with and without 0.01 per cent sodium carbonate. The pH of 0.1 to 1.0 per cent aqueous solutions of the sodium salts of the
(Turn to Page 73)

Table 2.—Effect of Temperature on the Germicidal Action of Sodium Hydroxide Solutions Against Staphylococcus aureus.

pH of solution	Temperature of solution	Plate count ¹				
		Exposure time in minutes				
		1	2	5	10	20
degrees C.						
10	20	2304	1728	1728	1792	1728
10	30	1856	1664	1600	1472	1344
10	35	1600	1600	1536	1536	1472
10	40	1536	1472	1152	1152	960
10	45	1472	768	312	188	4
11	20	1728	1728	1728	2688	2368
11	30	3200	3264	3456	3968	3435
11	35	2048	1536	1536	1536	1536
11	40	1536	1408	1408	1088	300
11	45	1152	608	138	6	0
12	20	1792	1984	1728	384	118
12	30	3008	2048	2048	78	8
12	35	3072	2176		6	0
12	40	1408	1216	1216	6	0
12	45	11	0	0	0	0
13	20	90	5	1	1	1
13	30	100	9	2	0	0
13	35	22	0	0	0	0
13	40	3	1	0	0	0
13	45	0	0	0	0	0

¹ Control plate count 3 to 4 thousand.



New Products and

Three bars of "Seaforth" men's soap, a shaving mug and stone jugs containing deodorant, talc, shaving lotion and cologne, are included in a gift box for men now being merchandised by Alfred D. McKelvy Co., Minneapolis. Armstrong's "Artmold" caps are used on the "Seaforth" containers.

Much heralded new white floating soap introduced by Lever Brothers Co., Cambridge, Mass., late in January, "Swan," among seven other claims of superiority over all other white floating soaps, is said to be "as mild as expensive 100% olive oil castiles."



New Roger & Gallet, New York, colored bath soap, "1420," introduced on the market in January, comes in two new odors, green almond and pink roses as well as the odors formerly used by Roger & Gallet, carnation and santal. Box of four cakes sells for \$1.00.

ucts
and

Packages

Container-sprayer of "Veeco Jiffy" glass cleaner, product of American Products Co., Atlanta, was awarded an honorable mention in the "Five and Dime" packaging contest recently conducted by Syndicate Store Merchandiser. Designed by Dr. R. L. Flett, the can was made by Owens-Illinois Can Co., closure by A. W. Wirz.



The complete line of containers for soap products of Jewel Tea Co., Barrington, Ill., have recently been redesigned by Arthur S. Allen, New York, package consultant. Typical packages in the new Jewel series are illustrated.

Conveniently packed in a hand carrier, this assortment of the products of Hershey Estates, Lebanon, Pa., was recently introduced through the company's retail outlets and is being used to sample its soap line including tar soap, soap granules, mechanic's soap, and cocoa butter and rose toilet soaps.



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NEWS

Drackett P. A. to Colors

James Morris Berry, Purchasing Agent for the Drackett Co., Cincinnati, has been assigned to active duty with the 69th Coast Artillery at Fort Crockett, Galveston, Texas. He is a reserve officer with a rank of Captain. For several years he served in Cincinnati's 505th C.A. Mr. Drackett has been chairman of the national committee on Paper Shipping Containers for the past nine years, and is a director of the Cincinnati Board of Trade and Adult Education Council.

P & G Shell Plant in Tenn.

The Procter & Gamble Defense Corporation, P & G subsidiary, incorporated in December to engage in manufacturing activities as part of the National Defense Program, will erect and operate a \$15,000,000 shell loading plant at Milan, Tennessee. President Richard R. Deupree said the plant will be erected on a 20,000-acre site and will employ approximately 6,000 persons.

Hagan Corp. to Expand

Hagan Corporation, Pittsburgh, is planning to commence building this spring a three-story, \$855,000 factory and office building for the production of water-conditioning compounds, chemicals and materials for the national defense. In addition, company officials are contemplating erecting a laboratory.

Canada Soap Prices Down

Substantial reductions in the prices of "Lifebuoy" and "Lux" toilet soap were recently announced by Lever Brothers, Ltd., Toronto, Canada. The wholesale price of "Lifebuoy" was reduced by 1-1/5 cents

per cake and the wholesale price of "Lux" was reduced by 2/3 cent a cake.

LaBelle Heads C-P-P Dept.

Alphonse N. LaBelle was recently named merchandising manager of the newly-formed merchandising



A. N. LaBELLE

department of the toilet goods division of Colgate-Palmolive-Peet Co., Jersey City, N. J. At the same time, Walter W. McKee was designated head of the sales operation department of the division with the title of sales manager.

Lever Bros. to Pay Trainees

A bonus of two months' salary will be paid to all employees of Lever Brothers Co., Cambridge, Mass., with three years service or more when they leave for military duty under the selective service act, the company announced recently. An additional month's pay will be given to employees returning to the company after completion of training. Employees with the company for more than six months but less than three years will be given one month's pay when they leave.

Lifebuoy Now Pine Scented

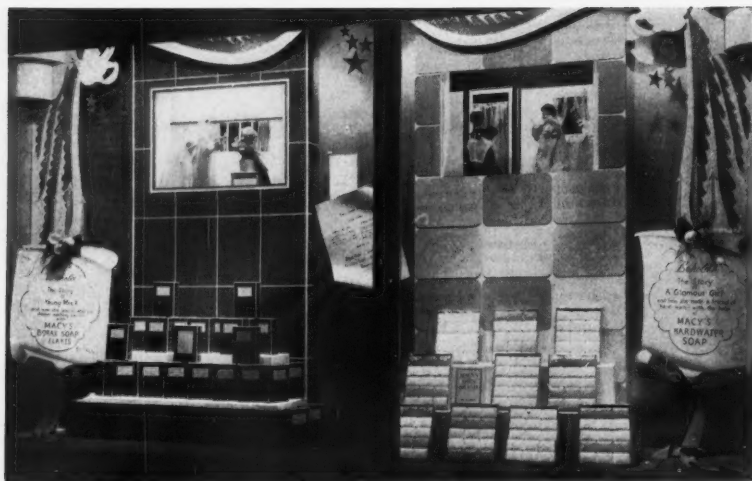
Having quietly eliminated the phenol odor of "Lifebuoy" soap and replaced it with an odor of oil of pine and eucalyptus, Lever Brothers, Inc., Cambridge, Mass., have just recently begun a new advertising campaign, featuring the new theme, "Zephyr Fresh." The old familiar "B. O." theme is subordinated to a minor position for the first time in almost twenty years. The carton remains unchanged.

Hecker Earnings Down

Net income of Hecker Products Corp., Indianapolis, recently reported for the quarter ended Dec. 31 was \$285,117, including dividends received from Best Foods, Inc.; this was equal to 19 cents a capital share. For the quarter ended Dec. 31, 1939, income was \$415,375, equal to 26 cents a share. For the six months ended Dec. 31, 1940, net income was \$304,016, or 20 cents a share as compared with \$689,940, or 43 cents a share for the six months ended Dec. 31, 1939.

P&G Contest Features Annuity

Financial security for life in the sum of \$100 a month, is the prize which will be awarded to the grand winner of the six contests, whose closing dates are weekly from February 1 to March 8, according to an announcement made by Procter & Gamble Co., Cincinnati, early in January. In addition to the grand prize, there will be five weekly prizes of \$500, and 50 of \$10 each. Participants are asked to complete in 25 words or less the sentence, "I like 'Ivory' soap because—" and to submit their answers accompanied by wrappers from large and medium cakes of "Ivory" soap.



Hunter New Pepsodent Ad Mgr.

Victor A. Hunter, former assistant advertising manager of Pepsodent Co., Chicago, recently became advertising manager.

Wittenburg Leaves Mathieson

Robert Wittenburg, who had been with the technical department of Mathieson Alkali Works, New York, recently left the company and is now associated with International Agricultural Corp.

T. J. Reynolds Dies

Thomas Jefferson Reynolds, former vice-president of the Globe Soap Co., Cincinnati, and the Diamond Match Co., died in Columbus, Ohio, December 31. He was 74 years old. He moved to Columbus from

New York City last October. His widow and two daughters survive.

Albany Soap Elects Officers

Officers of Albany Soap Corp., Albany, N. Y., elected for the year 1941 at the recent annual meeting of the company are as follows: president and general manager, Joseph Grober; 1st vice-president, W. C. Schopman; assistant manager, W. H. Geier; treasurer, John H. Rea; secretary, Harry J. Geier.

Veteran Soaper Dies

Joseph W. Leberman of Enterprise Mill Soap Works, Philadelphia, died last month after a year's illness. He had been connected with the soap industry for over fifty years, his father also being a soap maker.

Macy's Dramatizes Soap

A streamlined version of the Punch and Judy show entitled "Mrs. Jones and Soapo, the Magician" was presented in the display windows of R. H. Macy & Co., New York department store, last month as an eye-stopping advertisement for Macy's own packaged borax soap flakes and hard water soap. On stages placed within giant reproductions of the Macy soap packages, small figures, "humanettes," enacted dramas in which Soapo, the Magician comes to the rescue of Mrs. Jones just as she is being conquered by wash-day blues over "ordinary soap." The display was worked out by Bliss Display Corp., New York, cooperating with the Macy display department.

Tell of Soap Novelty Maker

Albert Serewicz, inventor and manufacturer of novelty soap toys covered with sponge rubber, was the subject of a story in the *Chicago Daily News* recently, following a Chicago federal court decision upholding his exclusive right to certain basic patents covering his products. The story tells of the invention and development of the novelties in the home of Mr. Serewicz. Today some 140 persons are employed by his company in factories in Valparaiso and Hebron, Ind. A third plant is being established in Toronto.

Lever Bros. Introduce "Swan"

"Swan" soap, widely advertised as "the first really new white floating soap since the gay 'nineties," has finally been put on the market by Lever Bros. Co., Cambridge, Mass. The new product, which, it is said, cost \$3,000,000 to develop, was introduced January 27, in several northeastern cities with a campaign that includes large newspaper advertisements, spot radio announcements and 24-sheet posters. Extensive advertising and an enormous couponing and sampling plan are designed to develop the eight claims made by "Swan" to superiority over other floating soaps. These eight emphasized

points are: (1) a whiter soap as pure and mild as imported castile soap; (2) a creamier, lasting lather which comes up two times quicker than with ordinary floating soap; (3) richer lather even in hard water; (4) a harder and firmer soap; (5) a new breaking development that divides the bar into two smooth hand-cakes; (6) a cleaner, fresher odor; (7) a smoother texture accomplished through creaming in a process similar to that used for fine toilet soaps; (8) much less moisture content than in other floating soaps."

The new soap comes in two sizes,—the large-sized bar and the regular-sized bar, both wrapped in

an attractive blue-green paper wrapper. An incentive to dealers to stock up liberally is the coupon which is given to housewives. This coupon is good for one regular-sized bar with the purchase of one large-sized bar. The company guarantees to take back any excess stock and reimburse the dealer for the full amount.

Before making "Swan" available to the public, the Lever Company announced, over 10,000 laboratory tests were made and over a quarter of a million women were questioned on soap preferences. Two patents cover the product itself and the machine for creaming the soap: U. S. Pats. 2,215,539 and 2,048,286.

Cherry Appeals FTC Order

Albert T. Cherry of Dayton, Ohio, doing business as the A. T. Cherry Co., and the Atco Soap Co., has filed a petition in the Sixth United States Circuit Court of Appeals at Cincinnati, asking the court to review and set aside a "cease and desist" order which the Federal Trade Commission issued against him on November 2. The commission held that prices on cartons containing Cherry soap products were "wholly fictitious," and ordered that Cherry cease using the expression, "combination deal 75 cents," or the price mark "75 cents" on soap containers unless the quantity of soap enclosed is regularly sold at 75 cents.

Start Silver Dust Drive

Lever Brothers Co., Cambridge, Mass., recently began a national advertising campaign for "Silver Dust" using space in important daily newspapers in the eastern and central states, and a radio campaign. The drive is to continue until the end of the year.

Schultz Sounds Optimistic Note

In his address before the national sales convention of Shulton, Inc., New York, on January 8, William L. Schultz, president of the company, made the statement that Shulton expects 1941 to be the biggest year in the history of the company. "With the rest of the world engaged in active warfare," he said, "there is every reason to believe that American-made goods will become foremost in world trade." Sales figures, analyzed during the three-day

convention, showed that the business of the company increased strikingly during 1940.

Open Eastern "Soilax" Plant

Economics Laboratory, Inc., St. Paul, recently announced the establishment of an Eastern manufacturing plant at Newark, N. J., for its line of cleaning materials and floor wax, including "Super Soilax" for mechanical dishwashing, "Tetrox" for hand glasswashing, "Formula B Soilax" for general use, "Mikroklene" germicidal detergent, and "Satinwax" self-polishing liquid wax. Located on the Newark tidewater, the plant is said to occupy 30,000 square feet of floor space. Expenditures for property improvement were \$18,000 and for installation of equipment, \$40,000, according to the officers of the company.

Cowles Elect Officers

New officers of Cowles Detergent Co., Cleveland, elected at a recent meeting of the board are as follows: vice-president and general manager, E. N. Horr; vice-president and director of sales, C. C. Bassett; secretary and treasurer, C. C. Barrett; assistant secretary and treasurer, C. H. Fisher. A. L. Mercer is president of the company.

Gwinn Joins Lightfoot-Schultz

H. H. Gwinn, formerly divisional superintendent of J. Eavenson & Sons, Camden, N. J., recently joined Lightfoot-Schultz Co., New York, as assistant to A. J. Caldwell, manager of the soap and glycerine manufacturing department.

P. & G. Earnings Down

Procter & Gamble Co., Cincinnati, recently reported for the quarter ended Dec. 31, 1940, net income of \$5,020,035, equal to 76 cents a common share. This compares with net income of \$7,634,697, or \$1.17 a common share in the December, 1939, quarter and \$4,598,992, or 69 cents a share for the September, 1940, quarter. For six months ended Dec. 31, 1940, earnings were \$9,610,027, or \$1.45 a share against net income of \$14,586,538, or \$2.23, for the six months ended Dec. 31, 1939.

New Campaign for "Old Dutch"

Cudahy Packing Co. has launched a new consumer advertising campaign on behalf of "Old Dutch" cleanser, in which the sales appeal is built around the efficacy of a new ingredient. This, according to the claims, is "50 per cent faster,"—"cuts cleaning time in half."

Facial Soap Stipulation

Rose Helen Kingstone, trading as R. H. Laird Co., and as Rose Laird, New York, engaged in selling "Rose Laird's Liquid Facial Soap" recently entered into an agreement with the Federal Trade Commission to cease representing that use of the product will correct blemishes of the skin, or will enable one to acquire or keep a clear skin, or will prevent skin eruptions, coarse pores or blackheads.

Permit "Teel" Registration

In a recent decision of the U. S. Court of Patents and Appeals, Procter & Gamble Co., Cincinnati, was given permission to register the word "Teel" as a trade-mark for a dentifrice. The decision reversed a former decision of the Examiner of Trade-Marks who had refused registration.

Earle Soap Moves

Earle Soap Manufacturing Co., Baltimore, has recently moved its place of business to 100 East Baltimore Street. The offices of the company were formerly at 303 North Eutaw Street.

Executives and salesmen of Shulton, Inc., New York, gathered for the first national sales convention of the company held last month in the company's home offices where plans for the coming year were discussed.



THE MYSTERY OF THE "SURPRISE PRIZE" PACKAGE *



1. Directors of the Woodward Manufacturing Corporation wanted to know why one of the company's major products—a liquid cleaner—was not showing a larger profit. The General Manager pointed out that the product was being packaged in a bulky, breakable container—costly to pack and ship. "We'd like to use a tin container," he said, "But here's what happens....."



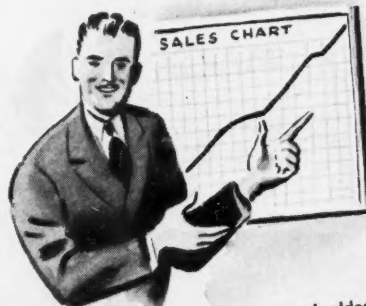
2. He exhibited an experimental can packed by their own chemists. Its sides were perforated with holes. "Our product is so highly corrosive, it eats through metal in a few weeks' time," he said. "It would undoubtedly help the balance sheet if we could market in cans, but a suitable tin container would be a surprise package to me."



3. At his golf club next day, the General Manager was approached by one of the directors. Said the director: "I didn't say anything yesterday, but I'll wager that our product can be successfully packaged in tin. Have you asked Continental to help?"



4. The General Manager took the tip and turned the problem over to Continental. A short time later, he examined a test pack. The cans were as tight and bright as the day they were filled with the cleaner. How was it done? The answer is simple—although the problem wasn't.



5. An inhibitor had been developed and added to the product, effectively preventing corrosion. Now the "surprise package" is a "prize package" in building sales and profit. This case is typical of hundreds of packaging problems involving research, development, and design solved by Continental every year. Have you solved such a problem? Why not consult Continental?

The packaging facts of this story are taken from a true case history in our files. Names are necessarily fictitious.

CONTINENTAL CAN COMPANY
OFFICES AND PLANTS IN ALL PRINCIPAL CITIES

Soap Makers Meet in New York

Name R. R. Deupree as President

THE largest number of soap makers ever to attend a meeting of the Association of American Soap and Glycerine Producers met on January 10 at the Waldorf-Astoria Hotel, New York, to elect new directors and officers for the coming year and to hear a series of reports on the outlook in the soap industry, the oil and fat market situation, and the position of soap makers in the national defense plans. R. R. Deupree, of Procter & Gamble Co., who served five terms as president of the association, from 1931 through 1935, was returned to this post upon the retirement of F. A. Countway of Lever Bros. Co. who asked not to be re-elected. Added to the board of directors by vote of the membership was J. C. Fitzpatrick of Fitzpatrick Bros., Chicago. Other directors were re-elected. The only other change in the official family was the election of O. E. Jones of Swift & Co. to the position of vice-president for the central states, to assume the post previously filled by R. R. Deupree.

The retiring president of the association, F. A. Countway, who is also president of Lever Bros. Co., was unable to be present at the meeting on account of laryngitis. In his absence A. F. Bernhard, Lever vice-president, delivered his annual address in which he said in part:

"We in the soap business have no dramatic or spectacular part in the defense program, but we may as well realize that every industry in this country is a defense industry. No one can now say what our particular tasks may be. But whatever we are called upon to do will be done more quickly and will be done better because we have built up a strong Association, with competent personnel. We all have reason to be

glad in these critical days that our industry has this Association.

"On the surface, 1940 does not seem to have been a very good year for the soap industry from the standpoint of tonnage sold. It is certain that the association's census figures will show less tonnage of soap sold in 1940 than in 1939. We all



F. A. COUNTWAY
... retiring president

know that the record-breaking sales of 1939 reflected trade inventory buying induced by the outbreak of war, and that some of our normal 1940 business was done in 1939. Despite this fact, soap tonnage sold in 1940 is almost certain to exceed the average of the previous five years during which we have had the association's figures.

"In the past decade the population of the United States has increased about 7 per cent, an average of less than 1 per cent each year. Calculated by any method, the annual rate of growth of soap sales exceeds the rate of population growth. Our industry may not be growing in such spectacular fashion as some others, but it is still growing.

"1941 should be a good year for soap sales. Defense orders awarded up to November 1, 1940 will create



RICHARD R. DEUPREE
... new association president



J. C. FITZPATRICK
... new board member

jobs for 4,000,000 workers. As the defense program expands it will wipe out a great deal of our unemployment. The National Industrial Conference Board says that by the middle of 1941 unemployment will be down to the 1928-29 level of perhaps 2 to 3 million; probably an irreducible minimum. Busy people need more soap. There will be more smoke and dirt and grime in 1941 than for many years. There will be more purchasing power. The national income for 1940 amounted to 74 billion dollars. In 1941 it should exceed 80 billion. The Bureau of Agricultural Economics estimates that it will go to 83 billion, which would top the all-time high of 82 billion attained in 1929. Defense expenditures alone will, it is estimated, amount to 15 billion in 1941.

"We should not count, however, on an immediate and uninter-

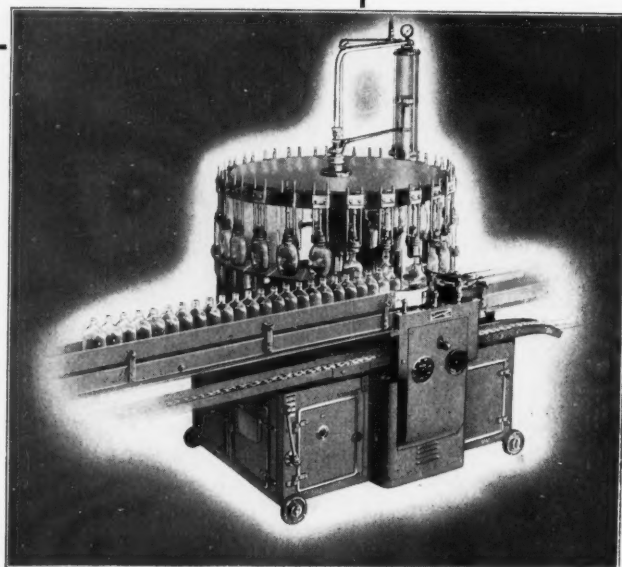


The steady parade of neatly filled bottles, hour after hour, day after day, is "sweet music" to the management's ears.

Karl Kiefer AUTOMATIC ROTARY VACUUM FILLERS



For polishes, insecticides, liquid waxes, cleaning fluids . . . in fact, all kinds of light and heavy liquids. Always big production quick! A clean 100% satisfactory job! Worry-free assurance that you expect from an organization possessing an enviable record of over 50 years' success.



WE BUILD completely automatic . . . semi-automatic . . . hand-fed equipment to clean, fill, close and convey bottles, jars and collapsible tubes.

FILTERS . . . PUMPS . . . PERCOLATORS.

THE KARL KIEFER MACHINE CO.
CINCINNATI, U. S. A.

NEW YORK
BOSTON
CHICAGO

LONDON, ENGLAND

SAN FRANCISCO
SEATTLE
LOS ANGELES

rupted rise in business activities. In many lines inventories are at a high level, and there may be some temporary dislocations until the various phases of the entire program can be properly geared together. The probabilities are, therefore, that industrial production and buying power will fluctuate around a relatively high level during the first half of 1941, and then advance further toward the end of the year."

R. R. Deupree, the new president of the association, summarized the situation in Washington today, with particular emphasis on the problems of national defense. "A colossal job," he said, "has been done in surveying to get an understanding of available supplies in all fields necessary to defense, and a great many steps have been taken to protect this country against shortages."

He pointed out that the desire and need for speed in production is greatest in those items in which our nation has not heretofore had production facilities equal to the tremendous demands that are now being made, such as war planes, ships, and munitions. "As an illustration," he said, "we have had practically no production of powder for war-time uses. Now when you want munitions you have to erect plants to produce them. Nobody can produce munitions under these circumstances overnight."

"Our own company, for example, has been asked to erect and operate a shell loading plant. The people who are versed in that field, asked our company to do that because of our knowledge of erecting buildings and supervising production. Production in that powder plant is necessarily months away. No matter how great the cry for powder and shells, their immediate production in the quantities desired just isn't in the cards."

Mr. Deupree indicated that no predictions could safely be made as to the needs for priorities. In the country's productive capacity up to the present time there has been enough available material, men, and transportation to handle plants in existence. When difficulties come, they

will arise from new plants or projects that are rapidly coming into existence or being started as part of the vast defense program.

E. H. Little of Colgate-Palmolive-Peet Co., re-elected a director of the association, gave the group a "director's-eye" view of the workings of the soap association, in part as follows: "Your board," said Mr. Little, "meets five or six times each year. These meetings are all-day meetings. I have been very much impressed since I have been a member of the board, as to the amount of time and work put in. I have never attended board meetings any place that are any more efficiently conducted or where there is greater sincerity in trying to attend to the affairs needing attention. The people who represent you on this board go about your business just as much interested in accomplishing something for the soap industry as we do at our place in the interests of our own business. There is a spirit of trying to do things for the best interests of this industry and everyone in it."

Mr. Little then spoke briefly of some of the projects taken up and handled in the past year or two, indicating that the method of procedure so far as possible is to use committees advisory to the actual staff of the association, on which serve experts from companies who can spare men qualified in the various fields. Experts from many companies serve as members of association committees, advising with the head of the committee, working in the best interests of the soap industry as a whole.

Roscoe C. Edlund, manager of the association, reported on the general program which the group has been attempting to follow out, and outlined plans for approaching closer to main association objectives over the coming year. In his report he referred to six broad aims which the association has constantly been trying to attain:

1. To raise cleanliness standards throughout the United States and increase per capita use of soap.
2. To protect old uses and develop

and promote new uses for glycerine.

3. To serve and guide the soap industry in making its most effective contribution to national welfare and defense.
4. To serve constantly as a means of contact and cooperation between the soap industry and the many agencies of government, Federal, State, and local.
5. To gather and compile facts, statistics, and authoritative information for the members of the industry and for governmental agencies and the public.
6. To provide a common meeting ground for members of the soap industry and a recognized channel for relationships with other industries and groups.

As indicated above R. R. Deupree of Procter & Gamble Co. will serve as president of the association over the coming year, his position as vice-president for the central states being taken by O. E. Jones of Swift & Co. E. H. Little of Colgate-Palmolive-Peet Co. was re-elected vice-president for the eastern states and F. H. Merrill, vice-president for the western states. N. S. Dahl of John T. Stanley Co. was re-elected treasurer and A. Roy Robson, Fels & Co., assistant treasurer. R. C. Edlund, association manager, was re-elected secretary.

The board of directors for the coming year will consist of: F. A. Countway, Lever Bros. Co., Cambridge, Mass.; N. S. Dahl, John T. Stanley Co., New York; R. R. Deupree, Procter & Gamble Co., Cincinnati; G. A. Eastwood, Armour & Co., Chicago; S. S. Fels, Fels & Co., Philadelphia; J. C. Fitzpatrick, Fitzpatrick Bros. Co., Chicago; A. Haas, Newell-Guttradt Co., San Francisco; E. B. Hurlburt, J. B. Williams Co., Glastonbury, Conn.; O. E. Jones, Swift & Co., Chicago; E. H. Little, Colgate-Palmolive-Peet Co., Jersey City; A. L. Mercer, Beach Soap Co., Lawrence, Mass.; F. H. Merrill, Los Angeles Soap Co., Los Angeles; J. D. Nelson, Andrew Jergens Co., Cincinnati; G. A. Wrisley, Allen B. Wrisley Co., Chicago; C. F. Young, Davies-Young Soap Co., Dayton, Ohio.

YOU CAN MAKE A RECORD

for economy of materials and for fineness of odor effects by incorporating these newly perfected, nominally priced F. B. Imitation Oils in your perfume formulae for soaps. A testing sample will bring you convincing proof . . . post-haste . . . upon request.

Quality
Raw Materials



Since 1871

Thyme Synthetic
Geranium Synthetic
Lavender Synthetic
Bergamot Imitation
Sandalwood Imitation

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.
BRANCH STOCKS
FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE

A FRITZSCHE PRODUCT for EVERY PURPOSE...

ESSENTIAL OILS . . . The FRITZSCHE label on your Essential Oil container is an absolute guarantee of purity and complete conformity to the highest standards. These basic materials are the finest that modern methods and experience can produce.

AROMATIC CHEMICALS . . . For finer aromatic effects and greater economy, choose your chemical requirements from this large and superlative selection of materials.

FIXATIVES . . . Timely now are our four Artificial Animal Scents—Musk, Civet, Castoreum and Ambergris, all especially adaptable to soap making. Our complete line includes, also, Rose Crystals—one of the best fixatives for all-around use.

ANTI-OXIDANTS . . . Developed for the preservation of soaps, animal and vegetable fats and oils, these materials are highly important to the soap manufacturer. Write us for details concerning Oxidex.

BATH SALT PERFUMES . . . These materials, combining both perfume and color, greatly facilitate the process of manufacture. Write for circular describing our Bath Perstels and giving complete list of perfume-color blends.

INSECTICIDES AND DISINFECTANTS . . . Some of our most important research achievements have been in this field of investigation. All materials listed in our catalog and recommended for these purposes have behind them guarantees of experience and the indisputable tests of time.

DEODORIZING COMPOUNDS . . . Write us for circulars describing Neutroleum, Javollal, Methalate "C", Safrella and other important deodorizing compounds of proven effectiveness.

TOILET SOAP COMPOUNDS . . . Many new and important toilet soap perfumes have been added to our already extensive line. These provide exquisite odor quality at very low cost. Ask us for particulars.

LIQUID SOAP AND SHAMPOO PERFUMES . . . Being highly soluble and mixing readily with liquid soaps, these special perfume blends are easy to use and low in cost.

DENTAL AND ORAL FLAVORS . . . These flavoring specialties are skillfully blended to produce pleasant, clean, refreshing taste effects. We are prepared, also, to create flavor blends to meet your own specifications and costs. Please feel free to consult us.

SEND FOR



SAMPLES

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.
FACTORIES AT CLIFTON, N. J. AND SEILLANS (VARE) FRANCE

Refuse Shulton Mark

Registration of the trade-mark "Early American" was refused recently to Shulton, Inc., New York, after opposition by Illinois Watch Case Co. on the grounds of similarity to its previously registered mark, "Elgin American." The decision of the U. S. Court of Patents and Appeals reversed a prior decision granting permission to register the mark. The goods of both companies were judged to be of the same descriptive properties and the names to be similar enough to result in possible confusion to consumers. However, the decision was not unanimous as two dissenting votes were cast on the grounds that the difference in spelling, sound and meaning was sufficient to render confusion improbable.

Package Contest Shows Trends

A wider use of transparencies in packaging, simplification of form and design, neater and smarter looking packages decorated in less garish colors, more informative labels and more realism in window displays were some of the trends in packaging and merchandising indicated by prize-winning entries in the 1940 All-America Package Competition which was held last month at the Chanin Building, New York. *Modern Packaging* magazine was the sponsor. Among the judges was William M. Bristol, Jr., vice-president of Bristol-Meyers Co., and president of the Packaging Institute. Prize-winners are to be announced in the March issue of *Modern Packaging*.

Honor Mallinckrodt V-P

Some one hundred and fifty executives in the drug and chemical industry attended a testimonial dinner at the Waldorf Astoria, New York, last month in honor of August A. Wasserscheid, vice-president of Mallinckrodt Chemical Works, St. Louis, on the occasion of his 70th birthday. Mr. Wasserscheid had been associated with Mallinckrodt for nearly half a century. The toastmaster of the evening was Joseph A. Huisking, of Fritzsche Brothers, Inc.

U.S.I. ALCOHOL NEWS

February



A Monthly Review of Technical Developments for Chemists and Executives



1941

CHEMICALS FOR SUNTAN PRODUCTS



Creams and lotions of the popular non-greasy type can be formulated with INDALONE and BK-5, which make possible a combination of sun-screening and insect-repellent properties.

U.S.I.'s INDALONE, BK-5 Ideal for Formulating Creams and Lotions

Superior creams and lotions, offering opportunities for building sales volume in the suntan market, can be formulated with the aid of two exclusive U.S.I. products, BK-5 (butyl cinnamoyl pyruvate) and INDALONE* (α, α -Dimethyl- α' -carbobutoxy- γ -dihydropyrone). INDALONE is the new trade mark of the solvent formerly sold under the name of "Dihydropyrone."

INDALONE is strikingly effective as an insect repellent, and furthermore can be used in combination with BK-5 for preparing products with both sun-screening and insect-repellent properties. When used in this way, INDALONE and BK-5 have the additional property of enhancing each other's sun-screening effectiveness.

BK-5, when dissolved in a slow evaporating, film-forming solvent such as INDALONE, is especially suitable for formulating the non-greasy type of suntan products that are demanded by many users. Because of its remarkable effectiveness as a light screen, BK-5 can be employed in extremely small proportions, conferring sun-screening powers without affecting the other physical properties of the cream or lotion.

U.S.I. will gladly give further information on INDALONE and BK-5.

*Registered Trade Mark

ALCOHOL WIDELY USED IN ANTISEPTIC MOUTH WASHES



Mouth washes offer an extensive market for Specially Denatured Alcohol, which is used in relatively large proportions in many preparations of this type. U.S.I. produces S. D. Alcohol in 8 formulas authorized for use in mouth washes—and U.S.I.'s testing methods assure the high quality needed in alcohol used for this purpose.

TECHNICAL DEVELOPMENTS

For further information write U.S.I.

New deodorants are said to be available in types suitable for masking the odors of Lethane, fly spray, cleaning fluid, Stoddard solvent, and similar products. Small quantities are reported to be effective. (No. 420a)

Insecticidal principles of pyrethrum flowers can be quantitatively determined by a new method that is said to involve hydrogenation in acetone-ethyl alcohol solutions. (No. 421a)

A double cone blender is said to conserve time and materials in blending face powders, chemicals, pharmaceuticals, and other products. (No. 422a)

New cellophane cement can be adapted to varying requirements of drying time and elasticity, it is claimed. (No. 423a)

A new oil is reported to be suitable for use in deodorant sprays intended for removal of odors in theaters or other public places. It is said to be effective in destroying odors of tobacco and cooking. (No. 424a)

A new chemical is described as a raw material for manufacturing synthetic oak-moss. According to the maker, it may be used in all toilet preparations in the recommended proportions without danger of decomposition. (No. 425a)

Stabilizing agents for soap show much greater efficacy when they are introduced in the form of caustic soda solutions, according to a recent patent. It is claimed that this method is superior to introducing the stabilizers during milling. (No. 426a)

DRUG and CHEMICAL BANQUET WILL BE HELD ON MARCH 13

16th Annual Banquet of the Drug, Chemical, and Allied Trades Section of the New York Board of Trade will be held at the Waldorf-Astoria, New York, on March 13. A large attendance is expected.

LOCAL ANESTHETIC PURIFIED BY PERCOLATION WITH ETHER

Procaine hydrochloride, widely used local anesthetic, can be improved by washing with ether, it is claimed in a recent patent. According to the inventors, this treatment eliminates the tendency of procaine hydrochloride to stick to the surface of glass ampules.

The sticking, it is said, appears to be due to the presence in commercial procaine hydrochloride of an oily or resinous material, which is removed by washing with ether. While ether is said to give best results in the washing process, it is reported that other organic solvents, such as acetone, may be employed.

U.S.I. INDUSTRIAL CHEMICALS, INC.

60 EAST 42ND ST., NEW YORK



BRANCHES IN ALL PRINCIPAL CITIES

INDUSTRIAL ALCOHOL IN ALL GRADES AND ALL FORMULAS

CONTRACTS AWARDED

Soap Powder Bids

Pacific Soap Co., Los Angeles, submitted the low bid on 300,000 lbs. soap powder at 3.02c. lb. and on 1,207,300 lbs. at \$33,527.47, in a recent opening by the Navy Dept., Washington, D. C. In the same opening, Colgate-Palmolive-Peet Co., Berkeley, Calif., was low on another lot of 300,000 lbs. at 2.99c. lb. and on another lot of 1,207,300 lbs. at \$36,098.27.

Naval Bids

In a recent opening by the Navy Dept., Washington, D. C., the following low bids were submitted: Day & Frick, Phila., 196,500 lbs. grit soap, \$6,865.25; Newell Cutradt Co., San Francisco, 60,000 lbs. grit soap, \$3,051. 60,000 lbs. grit soap, \$2,880 f.o.b. works, 10,325 lbs. grit soap, \$545.60; Swift & Co., Chicago, 23,250 lbs. toilet soap, \$1,804.68.

Treasury Soap Award

Stahl Bros., Buffalo, were recently awarded a contract by the Treasury Procurement Div., Washington, D. C., for 18,000 lbs. toilet soap at 6.80c.

Silver Polish Bids

In a recent opening by the Navy Dept., Washington, D. C., C. F. Jameson & Co., Haverhill, Mass., bid low on 200 lbs. silver polish powder at 8.62c., 900 lbs. silver polish, paste at \$87.87 and 250 lbs. silver polish powder at 9.62c. lb. In the same opening, Reed & Barton Corp., Taunton, Mass., bid low on 1,100 lbs. silver polish paste at 5.5c. lb.

Laundry & Grit Soap Awards

In a recent opening by the Army Quartermaster Corps, Atlanta, Iowa Soap Co., Burlington, Iowa, was awarded a contract for 90,000 lbs. laundry soap, 3.3c. In the same opening, Colgate-Palmolive-Peet Co.,

Jersey City, was awarded a contract for 107,700 lbs. of laundry soap at 3.41c. lb. and Conray Products Co., N. Y., a contract for 22,000 cakes grit soap at 3.18c. and 31,020 cakes at 2.59c.

TSP Bids

In a recent opening by the Navy Dept., Washington, D. C., the following low bids on trisodium phosphate were submitted: A. R. Maas Chemical Co., Los Angeles, 90,000 lbs., 3.25c. lb.; B. P. Ducas Co., Jersey City, 90,000 and 280,000 lbs., 2.72c. lb.; Braun-Knecht-Heimann Co., San Francisco, 280,000 lbs., 3.19c. lb.

Metal Polish Bid

Wonder Chemical Co., Bklyn., submitted the low bid on 2,880 cans metal polish of \$183.74, in a recent opening by the Panama Canal, Washington, D. C.

Soap Awards

In a recent opening by the Army Quartermaster Corps, Bklyn., the following contracts were awarded: 100,000 cakes toilet soap, Kirkman & Sons, Bklyn., 2.21c.; 5,000 lbs. soap, John T. Stanley Co., New York, 5.1c.; 10,000 lbs. soap, H. Kohnstamm & Co., New York, 5.25c.

Scouring Compound Bids

Stevens Soap Corp., Brooklyn, submitted the low bid on 50,900 lbs. scouring compound at \$1,173.50, in a recent opening by the Navy Dept., Washington, D. C. In the same opening Armour & Co., Chicago, bid low on 15,000 lbs. at 3.04c. lb.

Army Quartermaster Awards

In a recent opening by the Army Quartermaster Corps, Jeffersonville, Ind., the following awards were made, Hunnewell Soap Co., Cincinnati, 2,000 cakes grit soap, 3c. lb.;

M. H. Fairchild & Bro., Chicago, 20,000 cakes grit soap, 2.69c. lb.; Colgate-Palmolive-Peet Co., Jersey City, 30,000 cakes toilet soap, 6.8c. lb. and 50,000 lbs. laundry soap, 2.866c. lb.

Cleaning Compound Bid

J. A. Tumbler Laboratories, Baltimore, submitted the low bid on 40,000 lbs. cleaning compound at 4.294c., in a recent opening by the Navy Dept., Washington, D. C.

Navy Metal Polish Bid

R. M. Hollingshead Corp., Camden, N. J., submitted the low bids on 155,200 pts. metal polish at \$11,158.88 and \$8,361.92 on a similar amount in recent openings by the Navy Dept., Washington, D. C.

Roach Exterminator Bid

Parley F. Harris, Baltimore, was the low bidder on 1,750 lbs. roach exterminator, in a recent opening by the Navy Dept., Washington, D. C.

Metal Polish Award

R. M. Hollingshead Corp., Camden, N. J., was recently awarded a contract by the Army Quartermaster Corps, Bklyn., for 48,000 cans metal polish at 6.48c.

P & G Gets Shortening Award

Procter & Gamble Distributing Co., Cincinnati, has recently received an order for \$318,387 to supply the navy with vegetable shortening.

Honor Killeen at Dinner

The entire staff of employees and executives of George Lueders & Co., essential oils, New York, gave a dinner at the Hotel Astor in honor of Edward V. Killeen, former president of the firm, on January 27, the eve of Mr. Killeen's fiftieth anniversary of service with the company. Mr. Killeen is still connected with the Lueders organization in an advisory capacity. Fourteen years ago he founded the Essential Oil Association of U.S.A.

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CASTILE, POWDERED
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COCONUT, POWDERED
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POTASH SOAPS

Liquid Olive Oil Soap Shampoo

Liquid Coconut Oil Soap Shampoo

Liquid Castile Soap Shampoo

Shampoo Base (Olive Oil & Coconut Oil)

Oil Soaps

Scrubbing Soaps

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Brooklyn, N. Y.

SOAPS

BOOKS

Modern Soap Making, by Dr. E. G. Thomssen and C. R. Kemp. The first entirely original American book on soap manufacture in several years. Thoroughly covers every phase of soap manufacture and glycerin recovery. Written by practical soap men...a truly practical book. Chapter headings: Raw Materials; Machinery and Equipment; Soap Making Methods; Soap Products; Glycerin Recovery and Refining; Analytical Methods; Appendix with reference tables, etc. 540 pages. \$7.50 per copy in U. S. Add 50 cents for foreign postage.

Henley's Twentieth Century Book of Recipes, Formulas and Processes. A handy reference book listing 10,000 miscellaneous formulas, including special sections for soaps, polishes, insecticides, etc. 800 pages, \$4.00.

The Industrial Chemistry of Fats and Waxes, by Hilditch. A study of the fats and waxes in relation to their use in industry. 450 pages, \$7.50.

Hydrogenation of Organic Substances, by Ellis. 1930 revised edition of this well-known book, pre-eminent in the field of hydrogenation. 990 pages, \$15.00.

Laundry Chemistry, by A. Harvey. A manual on the chemistry of laundry materials and methods. 120 pages, 5 x 7½, \$1.75.

Pyrethrum Flowers, by Gnadinger. A complete compilation of all known facts on pyrethrum; its history, sources, evaluation, chemistry and uses. The problems involved in the manufacture of pyrethrum products are given thorough and lucid exposition. 396 pages, \$5.00.

"Soap." Bound volumes for years 1927-28, and 1937 available at \$12.00 each.

Blue Book. A Buyer's Guide, Catalogue and Business and Technical Reference Book. 210 pages, \$1.00.

Vegetable Fats and Oils, by George S. Jamieson. 444 pages. An American Chemical Society Monograph. Covering classification, occurrence, properties, analytical methods, etc., of vegetable oils, fatty acid and other derivatives; also production and refining methods. \$6.50.

Modern Cosmetics, by Francis Chilson. Second edition with complete revision of text, addition of many new chapters, tested and revised new formulas, \$6.00.

Owing to the large numbers of books supplied it is impossible to open accounts on individual book orders or to supply books on approval. Please send check with order.

MAC NAIR-DORLAND CO.
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NEW TRADE MARKS

The following trade-marks were published in the January issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks Filed

ORBO—This in outline letters describing soap. Filed by Brillo Manufacturing Co., New York. Sept. 5, 1939. Claims use since June 8, 1939.

OXONE—This in solid letters describing metal polish. Filed by Sarah L. Logie, Cleveland. July 29, 1940. Claims use since July 27, 1940.

CHAMPAGNE MIST — This in fancy letters describing soap preparation. Filed by Guy J. Banta, Banson Products Co., Los Angeles. Sept. 7, 1940. Claims use since Aug. 6, 1940.

SANA-PORCE — This in solid letters describing porcelain cleaner. Filed by Huntington Laboratories, Huntington, Ind., Oct. 10, 1940. Claims use since May, 1925.

TOILET-SAN — This in solid letters describing porcelain cleaner. Filed by Huntington Laboratories, Huntington, Ind., Oct. 10, 1940. Claims use since 1925.

CIRCO—This in reverse letters in circle describing auto cleaner. Filed by Circo Prods. Co., Cleveland, Oct. 25, 1940. Claims use since Nov. 11, 1935.

FOAMAWAY—This in script letters describing rug cleaner. Filed by Household Chemical Sales, Long Island City, Oct. 19, 1940. Claims use since Oct. 1, 1933.

WISHERMAKER'S HOUSE—This in solid letters describing soap. Filed by Carson Pirie Scott & Co., Chicago,

Nov. 15, 1940. Claims use since Oct., 1938.

ARE JAY—This in script letters describing disinfectant and tooth paste. Filed by Parfums Are-Jay, New York. Sept. 24, 1938. Claims use since Jan., 1926.

TEEL—This in solid letters describing dentifrice. Filed by Procter & Gamble Co., Cincinnati, Oct. 17, 1938. Claims use since Sept. 22, 1938.

BINGO—This in solid letters describing drain cleaner. Filed by Huntington Laboratories, Huntington, Ind., Oct. 10, 1940. Claims use since 1921.

SNAIL DED—This in bold letters describing insecticide. Filed by Midway Chemical Co., Jersey City, Nov. 13, 1940. Claims use since Oct. 17, 1940.

FLAV-O-DENT — This in outline letters over circular illustration describing tooth paste. Filed by Flav-O-Dent Co., Brooklyn, Nov. 14, 1940. Claims use since Nov. 4, 1940.

PENNZOIL—This in solid letters over drawing of bell describing insecticide. Filed by Pennzoil Co., Los Angeles, Nov. 14, 1940. Claims use since Aug. 6, 1940.

BADFIDO—This in solid letters describing cleaner. Filed by Skour-Nu, Inc., New York, Oct. 31, 1940. Claims use since Aug. 1, 1940.

N-L CONCENTRATE — This in solid letters over arrow describing cleaner. Filed by Lisle C. Van Nest, National Laboratories, Toledo, Nov. 2, 1940. Claims use since Aug., 1939.

KNO-KO—This in solid letters describing soap. Filed by J. B. Williams Co., Glastonbury, Conn., Nov. 8, 1940. Claims use since Oct. 28, 1940.

LOWILA—This in solid letters describing detergent. Filed by Westwood Pharmacal Corp., Buffalo, Nov. 22, 1940. Claims use since Nov. 15, 1940.

ZEAL—This in bold letters describing detergent. Filed by Turco Products, Inc., Los Angeles, Nov. 23, 1940. Claims use since Mar. 8, 1925.

FUMEX—This in solid letters describing insecticide. Filed by G. E. Conkey Co., Cleveland, Jan. 10, 1940. Claims use since May 1, 1939.

LEJAW—This in solid letters describing shampoo. Filed by Leo J. Awad, L. J. Awad Mfg. Co., Phila., Jan. 29, 1940. Claims use since Jan. 3, 1931.

SURPRISE—This in solid letters in white space on black oblong block describing cleaner. Filed by Clifton A. Barker, Barker Chemical Products, Los Angeles, Nov. 4, 1940. Claims use since Sept. 13, 1940.

BLOTEX—This in script letters over rectangular design describing detergent. Filed by Blotex Co., Springfield, O., Nov. 16, 1940. Claims use since Oct. 31, 1940.

PROPERT'S—This in solid letters over illustration of fox describing shoe polish. Filed by Salomon & Phillips, N. Y., Aug. 15, 1940. Claims use since 1895.

PAINTITE—This in solid letters describing cleaner. Filed by Turco Products, Los Angeles, Sept. 28, 1940. Claims use since Mar. 18, 1938.

EZYM—This in outline letters describing athlete's foot preparation. Filed by Rosie Breen Smith, Irvin & Rose, New Orleans, Aug. 24, 1938. Claims use since July 2, 1936.

HEALTH-GARD—This in solid letters over blue cross and fanciful portrait describing germicide. Filed by Joseph I. Blanck, Health-Gard Process Co., Brooklyn, Feb. 28, 1939. Claims use since Jan. 1, 1939.

DOUBLE-TEE — This in solid letters describing athlete's foot preparation. Filed by W. E. Ulrich, Buffalo, N. Y., Apr. 2, 1940. Claims use since June 1, 1938.

LILLIAN RUSSELL — This in script type describing shampoo. Filed by Lillian Russell, Kew Gardens, Long Island, Apr. 4, 1940. Claims use since Mar. 4, 1934.

CAMPUS—This in solid letters next to drawing of college building describing deodorant. Filed by Har-

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a lower priced version
. . . for SOAPS*

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Also, no foreign matter in your raw materials means no foreign matter in your soap . . . no lost profit in removing it during manufacture . . . no lost trade in case you don't.

NONE BETTER THAN MUNN . . . THE BEST UNDER THE SUN



old P. Willats. Hollywood. Oct. 16, 1940. Claims use since June 17, 1940.

RUST-FOE—This in solid letters describing cleaner. Filed by Rust-Foe Co., N. Y., Oct. 4, 1940. Claims use since March, 1939.

Trade Marks Granted

383,729. Insecticide. Dewey & Almy Chemical Co., Cambridge, Mass. Filed Feb. 16, 1940. Serial No. 428,611. Published Apr. 9, 1940. Class 6.

383,735. Shampoo. Marrow's, Chicago. Filed Mar. 21, 1940. Serial No. 429,818. Published Oct. 1, 1940. Class 6.

383,752. Shampoo. Victor De Journo, Allentown, Pa. Filed May 4, 1940. Serial No. 431,547. Published Oct. 15, 1940. Class 6.

383,779. Shampoo. Lucky Heart Labs., Inc., Memphis. Filed June 17, 1940. Serial No. 433,080. Published Oct. 15, 1940. Class 6.

383,961. Cleaner. C. S. Santmyer, Pittsburgh. Filed May 14, 1940. Serial No. 431,924. Published Oct. 22, 1940. Class 4.

383,971. Soap. Mary Chess, Inc., New York. Filed June 14, 1940. Serial No. 433,003. Published Oct. 22, 1940. Class 4.

383,984. Cleaner. Davies-Young Soap Co., Dayton. Filed July 10, 1940. Serial No. 433,812. Published Oct. 22, 1940. Class 4.

383,988. Soap. The House for Men, Inc., Chicago. Filed July 15, 1940. Serial No. 433,972. Published Oct. 22, 1940. Class 4.

384,010. Soap. J. B. Williams Co., Glastonbury, Conn. Filed Aug. 17, 1940. Serial No. 435,103. Published Oct. 22, 1940. Class 4.

384,012. Soap. Colgate-Palmolive-Peet Co., Jersey City. Filed Aug. 21, 1940. Serial No. 435,195. Published Oct. 22, 1940. Class 4.

384,013. Soap. Kirkman & Son, Inc., Brooklyn, assignor to Colgate-Palmolive-Peet Co., Jersey City. Filed Aug. 23, 1940. Serial No. 435,209. Published Oct. 22, 1940. Class 4.

384,116. Tooth Paste. Leo Lescinskis, New Haven, Conn. Filed

July 2, 1940. Serial No. 433,615. Published Oct. 22, 1940. Class 6.

384,139. Lens Cleaner. Ralph R. Wilkins, Wilkins Co., Cortland, N. Y. Filed July 20, 1940. Serial No. 434,194. Published Oct. 29, 1940. Class 4.

384,146. Soap and cleaner. C. B. Dolge Co., Westport, Conn. Filed July 25, 1940. Serial No. 434,322. Published Oct. 29, 1940. Class 4.

384,188. Deodorant. Anderson-Stolz Corp., Kansas City, Mo. Filed Aug. 15, 1940. Serial No. 435,011. Published Oct. 22, 1940. Class 6.

384,212. Shampoo. Ernest W. Morgan, Chicago. Filed Aug. 24, 1940. Serial No. 435,371. Published Oct. 22, 1940. Class 6.

384,253. Insecticide. U. S. Industrial Chemicals, New York. Filed Sept. 11, 1940. Serial No. 435,387. Published Oct. 22, 1940. Class 6.

384,258. Detergent. Ultra Chemical Works, Paterson, N. J. Filed Sept. 14, 1940. Serial No. 435,988. Published Oct. 22, 1940. Class 6.

384,261. Insecticide. C. B. Dolge Co., Westport, Conn. Filed Sept. 17, 1940. Serial No. 436,051. Published Oct. 22, 1940. Class 6.

384,326. Polish. C. B. Dolge Co., Westport, Conn. Filed July 25, 1940. Serial No. 434,321. Published Nov. 5, 1940. Class 16.

384,410. Soap Flakes. Procter & Gamble Co., Cincinnati. Filed Feb. 3, 1938. Serial No. 402,649. Published April 19, 1938. Class 4.

384,438. Polish Preservative. H. D. Triantafillu, H. D. T. Co., White Plains, N. Y. Filed Feb. 29, 1940. Serial No. 429,075. Published Nov. 12, 1940. Class 16.

384,486. Cleaner. Thomas A. Fox, Re-New Products, Danville, Va. Filed July 10, 1940. Serial No. 433,320. Published Nov. 12, 1940. Class 4.

384,494. Insecticide. United Co-operatives, Indianapolis. Filed July 17, 1940. Serial No. 434,091. Published Nov. 5, 1940. Class 6.

384,519. Insecticide. Andrew Wilson, Inc., Springfield, N. J. Filed Aug. 8, 1940. Serial No. 434,821. Published Nov. 5, 1940. Class 6.

384,555. Insecticide. J. W. Woolfolk Co., Fort Valley, Ga. Filed Aug. 27, 1940. Serial No. 435,443. Published Nov. 5, 1940. Class 6.

384,600. Insecticide. Charles Horlick, Horlick Products Co., Horlicksville, Wisc. Filed Sept. 23, 1940. Serial No. 436,268. Published Nov. 5, 1940. Class 6.

White King Cited by FTC

The Federal Trade Commission recently issued an order directing White King Soap Co., Los Angeles, to stop making misleading claims in the sale of a laundry soap and a toilet soap manufactured by its parent company, Los Angeles Soap Co. Among the advertised claims to which the FTC took exception were: that "White King Granulated Soap" is the only soap with which fabrics can be satisfactorily washed in cool water; that cool water washing causes fabrics to be brighter and whiter than hot water washing; that the use of this soap in washing textiles makes it unnecessary to use bleaching or bluing; that the use of a jelly made from "White King Granulated Soap" will remove all spots or stains from fabrics; that this soap is superior to all other soaps; that all fabrics fade or shrink when washed in hot water and that the use of the product prevents fabrics from fading or shrinking; and that "White King Toilet Soap" will keep the skin fresh or supple or prevent or remove wrinkles.

Aromatics Salesman Dies

Clifford L. Weston, for the past five years Eastern sales representative of Aromatics Products, Inc., New York, died recently after an illness of several weeks. He was sixty years old. Prior to his connection with the Aromatics Products organization, Mr. Weston had been associated with other aromatic chemicals houses, including Polak & Schwartz, Inc., Givaudan-Delawanna, Inc., and Antoine Chiris Co., all of New York.

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GERANIUM SYN. "B"

PRICE \$4.00 LB.

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WE ALSO RECOMMEND OUR

CIVET SYN. POWDER.....	\$12.50
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CANANGA SYNTHETIC	2.00

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charge. Capacity, one
quart dry measure. One
to a carton. Straps for
mounting to horizontal
or vertical pipe or wall.
Also available with ad-
justable discharge
and/or lock top.



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wash at a time. Con-
structed of heavy brass-
nickel and chrome plat-
ed. Mountings for wall
or for horizontal pipe. ◆

NICKEL AND CHROME-
PLATED BRASS • STURDY FOOL-PROOF
CONSTRUCTION

In designing and building over 100,000
soap dispensers we have encountered and
licked many a problem. These dispensers
will help your sales. They are efficient,
well-built and sturdy. Highly polished
chromium plate over nickel on solid brass
base. Easy to clean. Ruggedly built. Theft-
proof lid. Large opening for easy refilling.
Heavy, sturdy mounting brackets. Write
today for prices and samples. SUGAR
BEET PRODUCTS COMPANY, 300 Waller
Street, Saginaw, Michigan.

As of January 29, 1941

NEW YORK—The trend in quotations on fats, oils and other raw materials for the manufacturer of soap and sanitary chemicals continued steadily upward during the month of January, bringing prices on practically all important domestic and imported fatty materials and many essential oils to higher levels than a month ago. Trading was generally quiet in the face of price advances, with buying along conservative lines due to uncertainty concerning the war situation abroad and political affairs at home.

Prices of most fats and oils are expected to rise moderately through 1941 and possibly more in 1942, according to an analysis of the fats and oils situation made by the Bureau of Agricultural Economics at Washington. The principal factor bringing about the rise is attributed to an expected improvement in industrial activity and in consumer incomes resulting in part from increased defense expenditures, particularly in the second half of 1941. Lard, tallow and grease prices are likely to advance relatively more than prices on other fats, says the bureau, as production of these materials will be substantially smaller in 1941 than in 1940. Total supplies of domestically-produced fats, however, are not expected to change greatly in the next two years, according to the bureau.

The inexorable factors of supply and demand in the essential oils market continued to work together to push prices to still higher levels during the period, especially among the imported items. Inorganic chemical materials remained very steady during the month as did aromatic chemicals generally. Few changes were noted among the insecticide raw ma-

terials; although red squill was reduced by one large seller. Other items remained much the same as a month ago. Candelilla wax and all grades of carnauba wax were advanced during the period.

Animal Fats

Quotations on all animal fats rose during the month, prices being advanced on tallow, greases, lard, stearic acid, etc. Current prices are: extra tallow $4\frac{7}{8}$ cents a pound, f.o.b. plant; special tallow, $4\frac{3}{4}$ cents a pound, f.o.b. plant; choice white grease, $4\frac{7}{8}$ to 5 cents, delivered; yellow grease, $4\frac{3}{4}$ cents, delivered. The new contract grade of tallow now being traded in on the New York Produce Exchange prescribes a color not darker than 11 F. A. C. and has a free fatty acid content of not more than 6%. The seller has the option of delivering "tallow of New York Produce Exchange new contract grade" or, at a discount of $\frac{1}{4}$ cents per pound, "tallow of New York Produce Exchange special tallow grade."

Vegetable Oils

With the one important exception of palm oil, prices of vegetable oils, both domestic and imported, were advanced substantially this period. Palm oil, at $21\frac{1}{4}$ cents a pound in tanks, c.i.f., New York, is now in a more favorable competitive position with respect to other soap stocks. Coconut oil was advanced $\frac{3}{8}$ cent to current prices of $33\frac{3}{8}$ cents a pound in tanks, New York, and 3 cents in tanks, Pacific Coast; as copra was advanced to a level of 1.75 to 1.90 cents. Babassu oil quotations rose to $61\frac{1}{4}$ cents a pound. Corn oil, soybean oil, cottonseed oil and linseed also figured in the general price in-

creases. Denatured olive oil remained nominally around \$2.30 to \$2.35 a gallon.

Essential Oils

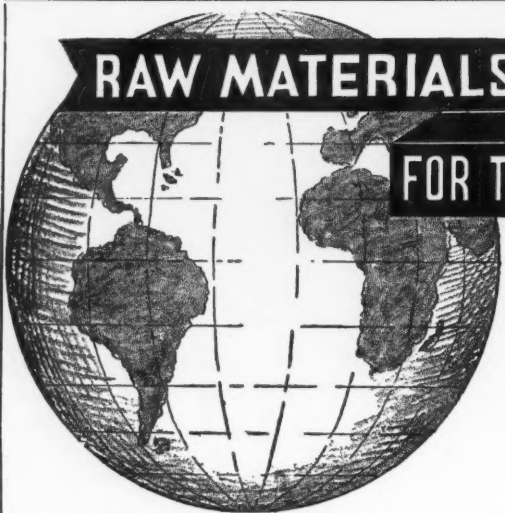
Many essential oils became more difficult to obtain this period and the extreme lack of normal supplies together with strengthening demand continues to stimulate the production of synthetic substitutes. Among essential oils higher than a month ago are the following: oil of birch tar, rectified, at \$1.10 to \$1.25; oil of cananga, native, at \$3.75 to \$4.50; oil of cedarwood, at 24c; oil of petitgrain, at \$1.40 to \$1.50; oil of peppermint, native, at \$3.00 to \$3.50; oil of cassia, at \$1.55 to \$1.75; and oil of linaloe, nominally 1.75 to \$2.00.

Insecticide Materials

Conditions were generally quiet and unchanged in the market for insecticide raw materials. One seller of red squill, however, reduced his price to a level of 95 cents to \$1.00 a pound as certain shipments from Italy which had been purchased some six months ago and had been interned in a Spanish port were released and finally found their way to the United States. Most other sellers are short on stocks and are quoting in the neighborhood of \$1.25 a pound for the material.

Dewey & Almy Expand Plant

Dewey & Almy Chemical Co. is expanding Chicago manufacturing facilities by erecting a \$25,000 addition to their plant built a year ago at 51st St. and South Meade Avenue. The company manufacturers there can closure compounds and chemicals for various specialties, including soap raw materials.



RAW MATERIALS

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White Mineral Oils
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Castor Oil	Olive Oil Foots	Fatty Acids	Grease	Modified Soda
Cocoanut Oil	Peanut Oil	Lard Oils	Lanolin	Silicate Soda
Corn Oil	Perilla Oil	Neatsfoot Oil	Caustic Soda	Metasilicate
Cottonseed Oil	Rapeseed Oil	Oleo Stearine	Soda Ash	Tri Sodium Phosphate
Palm Oil	Sesame Oil	Stearic Acid	Caustic Potash	Di Sodium Phosphate
Palm Kernel Oil	Soya Bean Oil	White Olein	Carbonate Potash	Chlorophyll
Olive Oil	Teaseed Oil	Tallow	Sal Soda	Superfating Agent

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CYCLOHEXANE

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CYCLOHEXANOL

**METHYL
CYCLOHEXANOL**

CYCLOHEXANONE

**METHYL
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98-100%


Prompt Quantity Shipments on Barrell Hydrogenated Coal-Tar Chemicals

New, improved production methods developed by Barrett—combined with increased capacity—facilitate prompt quantity deliveries on cyclic hydrocarbons, alcohols, and ketones.

For the soap, insecticide and disinfectant trade, the alcohols have many useful and interesting properties. These include good solvent power, high flash point, "coupling" action, surface tension reduction and emulsion stabilizing. They are especially effective in solvent soaps used in the dry cleaning, textile and general degreasing fields. The ketones are excellent solvents for many organic materials and this property opens up many uses.

A new illustrated booklet, "Barrett Hydrogenated Coal-tar Chemicals," is now available. It gives specifications, other properties and some suggested applications. Write for your copy today. There is no charge or obligation.

THE BARRETT COMPANY
40 Rector Street New York, N. Y.
... One of America's
Great Basic Businesses



RAW MATERIAL

PRICES

(As of January 29, 1941)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C. P., drums	lb.	\$.07½	\$.08
Acid, Boric, bbls. 99½%	ton	96.00	128.00
Cresylic, drums	gal.	.68	.70
Low boiling grade	gal.	.68	.70
Muriatic, C. P., carboys	lb.	.08	—
Oxalic, bbls.	lb.	.10½	.12
Adeps Lanae, hydrous, drums	lb.	.24½	.25
Anhydrous, drums	lb.	.26½	.27
Alcohol, Ethyl, U.S.P., bbls.	gal.	6.00½	6.07
Complete Denat., SD 1, dms., ex.	gal.	.30½	.35½
Alum. Potash lump, bbls.	lb.	.04	—
Ammonia Water, 26°, drums	lb.	.02¼	.02½
Ammonium Carbonate, tech., bbls.	lb.	.08	—
Bentonite, 1, works, 325 mesh	ton	16.00	—
Bentonite, 2, works, 200 mesh	ton	11.00	—
Bleaching Powder, drums	100 lb.	2.00	3.35
Borax, pd., cryst., bbls., kegs	ton	58.00	74.00
Carbon Tetrachloride, car lots	gal.	.66½	1.10
L. C. L.	gal.	.73	1.20
Caustic, see Soda Caustic, Potash Caustic			
China Clay, filler	ton	10.00	16.00
Cresol, U.S.P., drums	lb.	.09½	.10½
Cresote Oil	gal.	.13½	.14½
Feldspar, works	ton	32.00	35.00
(200 to 325 mesh)			
Formaldehyde, bbls.	lb.	.05½	.06
Fullers Earth	ton	15.00	—
Glycerine, C.P., drums	lb.	.12½	.13
Dynamite, drums	lb.	—	Nom.
Saponification, drums	lb.	.08½	.08¾
Soap, lye, drums	lb.	.07½	.07¾
Hexalin, drums	lb.	.30	—
Lanolin, see Adeps Lanae.			
Lime, live, bbls.	per bbl.	—	2.45
Mercury Bichloride, kegs	lb.	2.24	2.39
Naphthalene, ref. flakes, bbls.	lb.	.07	.07¼
Nitrobenzene (Mirbane) drums	lb.	.08	.09
Paradichlorobenzene, drums	lb.	.11	.13½
Petrolatum, bbls. (as to color)	lb.	.02¾	.07½
Phenol (Carbolic Acid), drums	lb.	.13	.14¾
Pine Oils, bbls.	gal.	.50	.59
Potash, Caustic, solid	lb.	.06¼	.06¾
Flake, 88-92%	lb.	.07	.07½
Liquid, 45% basis	lb.	.03½	.03¾
Potassium Carbonate, solid	lb.	.06½	.06¾
Liquid	lb.	.03	.03½
Pumice Stone, powder	100 lb.	No Prices	
Rosins (net wt., ex yard, New York)—			
Grade D to H	100 lb.	2.30	2.38
Grade I to N	100 lb.	2.48	2.90
Grade WG to X	100 lb.	3.20	3.41
Wood, ex. dock	100 lb.	1.54	1.90
Rotten Stone, pwd., bbls.	lb.	—	—
Silica	ton	20.00	27.00
Soap, Mottled	lb.	.04½	.04½
Olive Castile, bars	lb.	.20	.35
Olive Castile, powder	lb.	.26	.36
Powdered White, Neutral	lb.	.18½	.20

Olive Oil Foot, bars, 68-70%	lb.	.09	—
Green, U.S.P.	lb.	.08	.09
Tallow Chips, 88%	lb.	.06½	.06¾
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.10	1.35
Carlots, in bulk	100 lb.	.90	.95
Soda Caustic, cont., wks., solid	100 lb.	2.30	—
Flake	100 lb.	2.70	2.95
Liquid, tanks, 47-49%	100 lb.	1.95	—
Soda Sal., bbls.	100 lb.	1.10	1.30
Sodium Chloride (Salt)	ton	15.00	15.60
Sodium Fluoride, bbls.	lb.	.07	.08¼
Sodium Hydrosulfite, bbls.	lb.	.16	.17
Sodium Metasilicate, ground	100 lb.	3.75	4.80
Crystalline	100 lb.	2.35	3.35
Sodium Pyrophosphate	100 lb.	5.10	5.60
Sodium Silicate, 40 deg., drum	100 lb.	.80	1.20
Drums, 52 deg. wks.	100 lb.	1.40	1.80
Tar Acid Oils, 15-25%	gal.	.22	.27
Triethanolamine	lb.	.19	.20
Trisodium Phosphate, bags, bbls.	lb.	.0225	.0335
Zinc Oxide, lead free	lb.	.06½	.07

Oils — Fats — Greases

Babassu, tanks, futures	lb.	.06¼	Nom.
Castor, No. 1, bbls.	lb.	.10¼	.11
No. 3, bbls.	lb.	.09¾	.10¼
Coconut (without excise tax)			
Manila, tanks, N. Y.	lb.	.03¾	—
Tanks, Pacific Coast, futures	lb.	.03	—
Copra, bulk, coast	lb.	.0175	—
Corn, tanks, West	lb.	.07	.07½
Cottonseed, crude, tanks, mill	lb.	.05½	.05¾
PSY, futures	lb.	.06½	.06¾
Fatty Acids—			
Corn Oil, tanks, Chicago	lb.	.08¼	.08½
Coconut Oil, tanks, Twitchell, Chi.	lb.	.09¼	.09½
Cotton Oil, tanks, Chicago	lb.	.07	.07½
Settled soap stock, Chicago	lb.	.02½	.02¾
Boiled soap stock, 65%, Chi.	lb.	.03½	.03¾
Foots, 50%, Chicago	lb.	.01¾	.01½
Red Oil, bbls., dist. or sapon., Chi.	lb.	.07¼	.08¼
Tanks	lb.	.06¾	—
Stearic Acid, saponif., Chi.			
Double pressed	lb.	.10	.11
Triple pressed	lb.	.12¾	.13¾
Greases, choice white, tanks	lb.	.05	—
Yellow	lb.	.04¾	—
Lard, city	lb.	.06¾	—
Linseed, raw, bbls.	lb.	.0970	.1050
Tanks, raw	lb.	.0900	.0920
Olive, denatured, bbls., N. Y.	gal.	2.35	Nom.
Foots, bbls., N. Y.	lb.	.10¼	Nom.
Palm, Sumatra, cif. New York, tanks	lb.	.02¼	—
Palm, kernel, shipment	lb.	No Prices	
Soya Bean, domestic, tanks, crude	lb.	.05½	.05¾
Stearine, oleo, bbls.	lb.	.06½	—
Tallow, special, f.o.b. plant	lb.	.04¾	—
City, ex. loose, f.o.b. plant	lb.	.04¾	—
Teased Oil, crude	lb.	.17½	Nom.
Whale, refined	lb.	.0910	—

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Read this letter
from
HARRY TOPLITZKY

Owner of
Southern California Disinfecting Co.
Los Angeles, California
to
**A. L. BOBRICK, President of Bobrick
Manufacturing Corporation**



SO. CALIF. DISINFECTING CO.

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WHOLESALE ONLY

Mr. A. L. Bobrick, President
BOBRICK MANUFACTURING CORPORATION
111-117 South Garey Street
Los Angeles, California

Re: Model #21 Liquid Soap Dispenser

Dear Art:

You've got something there, Art Bobrick — and I'm delighted to tell the readers of SOAP Magazine about it.

Since you brought out the No. 21 in June of 1940, we've sold 518 of them. In the same period last year we sold 120 of your No. 9, which sold at the same price. Every one of these 518 #21's was sold at a profit — not given away — and on top of that, they brought us many NEW liquid soap accounts that we couldn't have closed with a high priced model dispenser — nor could we have secured them with a "cheap" model.

But this is what will interest SOAP subscribers: From that total of 518 dispensers (over half a gross a month) we HAVEN'T HAD ONE SINGLE COMPLAINT! So now we're so sold on that dispenser we would buy them if you doubled the price — but we wouldn't be able to sell as many of them, of course, so it is good to know that we can continue to buy the No. 21 for \$1.35 each in gross lots. Why didn't you design the No. 21 thirty years ago?

Best regards,

SO. CALIF. DISINFECTING CO.

Harry Toplitzky
Harry Toplitzky

ht:ab



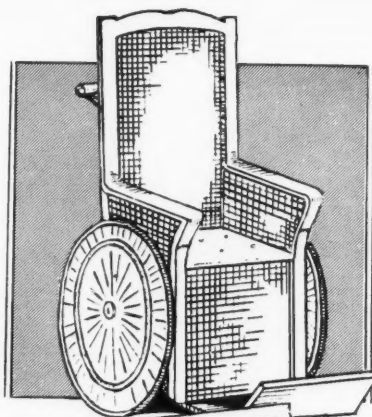
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21

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Essential Oils

Almond, Bitter, U.S.P.	lb.	\$3.00	\$3.25
Bitter, F.F.P.A.	lb.	3.15	3.50
Sweet, cans	lb.	.95	1.00
Anise, cans, U.S.P.	lb.	.85	.90
Bay, 55-60% phenols, cans	lb.	1.20	1.25
Bergamot, coppers	lb.	13.50	15.00
Artificial	lb.	2.25	5.00
Birch Tar, rect., cans	lb.	1.10	1.25
Crude, dms.	lb.	.37	.38
Bois de Rose, Brazilian	lb.	2.00	2.10
Cayenne	lb.	—	Nom.
Cade, cans	lb.	.39	.40
Cajeput, native, cans	lb.	.65	.70
Calamus, cans	lb.	8.25	8.50
Camphor, Sassy, drums	lb.	.22	.24½
White, drums	lb.	.22	.23
Cananga, native, cans	lb.	3.75	4.50
Rectified, cans	lb.	3.95	4.65
Caraway Seed	lb.	6.00	Nom.
Cassia, Redistilled, U.S.P.	lb.	1.55	1.75
Cedar Leaf, cans	lb.	.90	.95
Cedar Wood, light, drums	lb.	.24	.25
Citronella, Java, drums	lb.	.34	.39
Citronella, Ceylon, drums	lb.	.37	.40
Clove, U.S.P., cans	lb.	1.10	1.15
Eucalyptus, Austl., U.S.P., cans	lb.	.65	.67
Fennel, U.S.P., cans	lb.	2.05	2.15
Geranium, African, cans	lb.	12.25	Nom.
Bourbon, cans	lb.	12.00	Nom.
Turkish	lb.	2.50	2.75
Hemlock, tins	lb.	.85	.90
Lavender, 30-32% ester, cans	lb.	5.00	5.25
Spike, Spanish, cans	lb.	1.85	2.00
Lemon, Ital., U.S.P.	lb.	5.00	—
Cal.	lb.	3.25	—
Lemongrass, native, cans	lb.	.78	.80
Linaloe, Mex., cases	lb.	1.75	2.00
Nutmeg, U.S.P., cans	lb.	2.25	2.35
Orange, Sweet, W. Ind., cans	lb.	2.50	2.60
Italian cop	lb.	8.00	Nom.
Distilled	lb.	.90	—
California, expressed	lb.	2.00	—
Origanum, cans, tech.	lb.	1.05	1.45
Patchouli	lb.	5.25	6.00
Pennyroyal, dom.	lb.	3.00	Nom.
Imported	lb.	2.25	2.50
Peppermint, nat., cans	lb.	3.00	3.50
Redis, U.S.P., cans	lb.	3.45	3.75
Petitgrain, S. A., cans	lb.	1.40	1.50
Pine Needle, Siberian	lb.	1.25	1.30
Rosemary, Spanish, cans	lb.	.71	.90
drums	lb.	.63	.80
Sandalwood, E. Ind., U.S.P.	lb.	4.95	5.25
Sassafras, U.S.P.	lb.	1.00	1.25
Artificial, drums	lb.	.68	.78
Spearmint, U.S.P.	lb.	2.40	2.60
Thyme, red, U.S.P.	lb.	.80	1.75
White, U.S.P.	lb.	.95	1.95
Vetivert, Bourbon	lb.	6.50	7.00
Ylang Ylang, Bourbon	lb.	7.00	Nom.

Aromatic Chemicals

Acetophenone, C. P.	lb.	\$1.60	—
Amyl Cinnamic Aldehyde	lb.	1.70	\$2.00
Anethol	lb.	1.10	1.15
Benzaldehyde, tech.	lb.	.45	.50
U.S.P.	lb.	.85	.95
Benzyl, Acetate	lb.	.44	.49
Alcohol	lb.	.63	.68
Citral	lb.	1.40	3.10
Citronellal	lb.	.75	.80
Citronellol	lb.	1.60	1.85
Citronellyl Acetate	lb.	4.00	7.00
Coumarin	lb.	2.75	3.00
Cymene, drums	gal.	.90	1.25
Diphenyl oxide	lb.	.50	.55
Eucalyptol, U.S.P.	lb.	.80	.85
Eugenol, U.S.P.	lb.	1.75	2.00
Geraniol, Domestic	lb.	.60	3.00
Imported	lb.	2.00	3.00
Geranyl Acetate	lb.	1.20	2.50
Heliotropin	lb.	3.00	3.20
Hydroxycitronellal	lb.	2.00	2.50
Indol, C. P.	lb.	32.00	34.00
Ionone	lb.	2.75	3.95
Iso-Eugenol	lb.	2.80	4.25
Linolool	lb.	2.10	3.30
Linalyl Acetate	lb.	1.75	3.00
Menthol	lb.	3.25	4.10
Methyl Acetophenone	lb.	2.50	3.00
Anthranilate	lb.	2.20	2.30
Paracresol	lb.	4.50	6.00
Salicylate, U.S.P.	lb.	.35	.37
Musk Ambrette	lb.	3.65	3.95
Ketone	lb.	3.70	4.10
Xylol	lb.	1.05	1.20
Phenylacetaldehyde Sp.	lb.	2.10	2.50
Phenylacetic Acid	lb.	1.75	3.00
Phenylethyl Alcohol	lb.	2.30	3.35
Rhodinol	lb.	5.50	10.90
Safrol	lb.	1.00	1.10
Terpineol, C. P., drs.	lb.	.25	—
Cans	lb.	.28	—
Terpinyl Acetate, 25 lb. cans	lb.	.82	.85
Thymol, U.S.P.	lb.	1.55	1.60
Vanillin, U.S.P.	lb.	2.50	2.75
Yara Yara	lb.	1.25	1.55

Insecticide Materials

Insect Powder, bbls.	lb.	.23	.26
Pyrethrum Extract			
5 to 1	gal.	1.20	1.25
20 to 1	gal.	4.70	4.85
30 to 1	gal.	7.00	7.25
Derris, powder—4%	lb.	.18	.20
Derris, powder—5%	lb.	.21	.23
Cube, powder—4%	lb.	.16	.19
Cube, powder—5%	lb.	.19	.22
Squill, red, dried	lb.	.95	1.25
Phosphorus paste	lb.	.25	.62½

Gums

Arabic, Amb. Sts.	lb.	.14	.15
White, powdered	lb.	.18	.20
Karaya, powdered No. 1	lb.	.14	.33
Tragacanth, Aleppo, No. 1	lb.	2.80	3.10
Flake	lb.	No	Prices

Waxes

Bees, white	lb.	.36½	—
African, bgs.	lb.	.30	Nom.
Refined, yel.	lb.	.35	.36
Candelilla, bgs.	lb.	.19½	.20½
Carnauba, No. 1, yellow	lb.	.72	.73
No. 2, N. C.	lb.	.71	.72
No. 3, Chalky	lb.	.58	.59
Ceresin, yellow	lb.	.11	.14½
Paraffin, ref., 125-130	lb.	.0570	—

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ACTIVE CARBON

Soap manufacturers have until recently looked upon NUCCHAR Active Carbon treatment as a luxury . . . necessary in the manufacture of edible products where odor and flavor are of such importance, but not necessarily needed in the manufacture of soap, for all toilet soaps are perfumed.

Now, however, we have found that the use of NUCCHAR GFO during bleaching of the fats prior to saponification, actually effects a large saving. On tallow, for instance, when used in combination with clay, one part of NUCCHAR GFO will replace

up to six times its weight of activated clay. Besides this saving in adsorbent costs, there are larger savings to be derived from the lower total oil retention (per unit weight of fat treated) as well as longer filter runs.

Investigate the possibilities of using NUCCHAR GFO on your soap fats. Write today for your sample.

Make your reservations now for the Drug, Chemical and Allied Trades Banquet at the Waldorf-Astoria on March 13th.

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PRODUCTION

SECTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, Oil & Fat Industries.

Wetting Agents vs. Detergents

WETTING agents, a combination of polar and non-polar groups, have properties intermediate in character between the two types of compounds.

Properties of Two Types

Polar (Salt)

Ionized
High dielectric constant
High melting point
Soluble in water
Insoluble in organic solvents
High boiling point
Melt conducts electricity

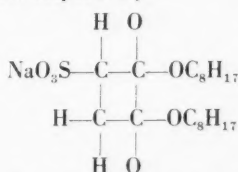
Nonpolar (Mineral oil)

Nonionized
Low dielectric constant
Low melting point
Insoluble in water
Soluble in organic solvents
Low boiling point
Melt does not conduct electricity

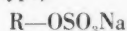
Wetting agents are somewhat different in effect and nature from dispersing agents. Wetting agents in low concentration reduce the surface tension of water and lower interfacial tension between the water and another surface, such as solid-liquid or liquid-liquid. The difference can be shown by adding carbon black to a dilute solution of wetting agent, which will wet it readily but the particles soon settle out. If carbon black is shaken into water and a true dispersing agent added, the mixture will remain much darker, as less settling occurs than with the wetting agent. Some wetting agents also possess dispersing power but many do not.

Examples of a wetting agent

and of a dispersing agent or detergent are an ester of a sulfonated dicarboxylic acid, and a sulfated fatty alcohol, respectively.



Ester of a sulfonated dicarboxylic acid (Aerosol type)



Sulfated Fatty Alcohol (Gardinol type)

With the former the polar or water-soluble group (NaO_2S) is in the middle of a branched chain molecule, while with the latter the same group is at the end of a long nonpolar group, indicated by R. When these materials are dissolved in water, a definite number of molecules will be required to cover completely the interface between the solution and another surface. With the sulfated higher alcohols the molecules can pack very closely together and a relatively large number will be required because the molecules are long but small in diameter. With the ester of the sulfonated dicarboxylic acid, only a relatively small number of molecules will be required to cover the interface, since the molecule when oriented is relatively short but greater in area.

Structure also accounts for differences in detergent properties.

Close packing of the straight-chain type products such as soap and sulfated fatty alcohols, is closely allied with their superior detergent properties. The branched chain compound lacks this packing power but is apt to be superior in wetting power to the long-chain type. Wetting agents have many commercial applications which depend for their effectiveness on an understanding of the nature of the compounds, their special usefulness, as well as their limitations. C. A. Sluhan. *Am. Dyestuff Reporter* 30, 1-4, 18-20 (1941).

Measuring Detergent Power

The ability of a washing agent to hold soot in suspension is considered a fair measure of its ability to remove solid soil in practical use. Bars, pastes and liquids were tested, the latter undiluted, the two former in 20 per cent suspension in water.

In the test, 200 mg. of an oily type of soot or lampblack were placed in a mortar. The sample of washing agent is made up, shaken well and transferred to a 10 cc. graduated cylinder. From 1 to 3 cc. of the washing agent was transferred to the mortar and rubbed with the lampblack. One drop of the liquid was then transferred to the middle of a standard strip of baryta paper and immediately rinsed with a stream of plain water. Usually a dark gray smudge remains on the paper. A few

more cc. of washing agent are added to the mortar, mixed with the lamp-black and a drop of the mixture transferred to a clean strip of baryta paper which is immediately rinsed. Further additions of washing agent are made in this way until a drop placed on fresh paper leaves the paper white when rinsed off. The number of cc. of washing agent required to suspend 200 mg. of lamp-black by this method of testing is called the "lampblack number." Values obtained varied from 2 to 70, the washing agent with the number 2 being the most effective in suspending solid soil. Detergents having values up to 25 were considered good. Such tests, although simple and only relative as to results, are considered to give values which parallel those which would be obtained in practical washing tests. In order to have any validity they should be carried out as a series by one person, so that the individual can standardize his procedure and degree of rinsing. M. C. Liesegang. *Fette und Seifen* 47, 458-60 (1940).

Uses for Amines

Besides being useful as detergents and emulsifying agents, the salts of high molecular-weight amines are strongly bactericidal and their solutions can be used as sterilizing mediums. A 0.009 molar solution of tetradecyl amine acetate in water kills *S. aureus* after 15 minutes contact and *E. coli* after 10 minutes contact. Some of the amines possess high insecticidal values and their kerosene solutions can be used as fly sprays or for the extermination of other insect pests.

A rather novel and interesting use of high molecular-weight amines is for the clarification of turbid waters. A concentration of about 10 p.p.m. of dodecyl amine acetate produces flocculation of the suspended particles in turbid waters so that a clear water is obtained after filtration whereas without the addition of the amine salt the turbidity of the water is not materially reduced by repeated filtration. A. W. Ralston. *Oil & Soap* 17, 89-91 (1940).

Soap Powder Analysis

Soap powders containing a mixture of sodium metaphosphate, orthophosphate, disodium phosphate, soda ash, sodium bicarbonate, and caustic soda or sodium silicate can be analyzed by titration to a faint pink color to phenolphthalein with 0.5 Normal hydrochloric acid, further titration with acid to a methyl orange end-point. The number of cc. of 0.5 Normal acid needed for the second titration are then added to the solution, which is boiled for 15 minutes. After boiling, the same number of cc. of 0.5 Normal potassium hydroxide solution are added, the solution is cooled and titrated with 0.5 Normal potassium hydroxide solution to a phenolphthalein end-point. A series of formulas give the composition, based on these titrations. J. Kubias. *Seifensieder-Ztg.* 67, 445-6 (1940).

Autoclave Fat Splitting

Factors in fat splitting were studied. The rate of saponification of tallow was increased by raising the temperature from 150° C. to 220° C. and by increasing the amount of caustic-soda catalyst from 0.25 per cent to 1 per cent based on the fat charge. On varying the similarly calculated proportion of water from 20 per cent to 200 per cent, the extent of splitting at equilibrium increased from 75 per cent to 95 per cent, but the rate of splitting was influenced only slightly. With the same proportions of catalyst, combining equivalents equal to 0.5 per cent of caustic soda, the saponification rate increased in the order of ammonia, caustic potash, caustic soda, lithium hydroxide, calcium oxide, magnesium oxide, and zinc oxide. With mixed catalysts, the rate was somewhat greater than would be calculated from the activity of the individual components.

The conclusion that saponification of fats is a homogeneous reaction occurring in the fat phase between fat and water dissolved in the fat, is supported by the following observations: The shape of the curves

showing degree of saponification as a function of time shows that the maximum saponification rate occurs under those conditions which are more unfavorable to emulsion formation. The activity of the catalysts increases with their ability to increase the solubility of water in fatty acids. L. Lascaray. *Fette und Seifen* 46, 628-32.

Powdered Sodium Silicate

Powdered sodium silicate is prepared by a process involving treatment with alcohol followed by pressing out the liquid. As an example, to 1000 grams of silicate having a silica-soda ratio of about 3:1 and a specific gravity of 39° Be., are added 100 cc. of methyl alcohol with stirring. A cheese-like mass is obtained which is subjected immediately to a pressure of about 30 atmospheres to express the liquid. Alcohol is recovered from the liquid by distillation. The hard and brittle cake withdrawn from the press is easily reduced to a powder, which is dried at 45° C. to give a free-flowing compound corresponding substantially to $\text{Na}_2\text{O} \cdot 3\text{SiO}_2 \cdot 6\text{H}_2\text{O}$. D. Kusman, British Patent No. 528,374.

New Hilditch Book

The Chemical Constitution of Natural Fats. T. P. Hilditch. 417 pp. London: Chapman & Hall, Ltd. 1940. The results of accumulated research on natural and synthetic fats have been assembled and brought up to date in this very excellent monograph by one of the foremost authorities on the subject. Analyses of many fats are given, classified according to their biological source in relation to their content of fatty acids. Even the component acids of seed fats show a correlation with the parent plants. Some 420 plant fats, 80 animal fats, and 100 fats of marine origin are dealt with. The biochemical aspects of fats are discussed. Quantitative methods for investigating fats are included. The book should prove an invaluable aid to those interested in or working on the chemistry of fats. C. A. Tyler.

Fat Separation

ADSORPTION studies were conducted in an effort to see whether triglycerides could be separated from one another by adsorption only. A mixture of four parts of trimyristine and one part of tristearin was dissolved in chloroform and poured through a column of silica gel which had been previously moistened with chloroform. The original mixture had a saponification number of 235.3, while the saponification number of the filtrate was 237.9, of the eluate obtained from the upper part of the adsorption column 267.9, and of the eluate obtained from the lower part of the adsorption column 186.7. This indicates that the trimyristin was adsorbed better than the tristearin by the silica gel.

Applied to coconut oil to determine whether fractionation of natural fats could be obtained by the method, the results differed with different adsorbent materials. With silica gel, coconut oil having an original saponification number of 261.6 gave for the filtrate a saponification value of 258.6, for the eluate from the upper part of the column 277.7, and the eluate from the lower part of the column 261.5. This showed greater adsorption of a low molecular-weight fraction. When alumina cream was used as adsorbent with coconut oil, a fraction of higher molecular weight was more strongly adsorbed. With Carlonit, an adsorbent earth, a fraction of low molecular weight was more strongly adsorbed. This behavior of coconut oil with silica gel and alumina cream corresponds to that previously obtained in fatty-acid fractionation with these adsorbents.

Separation by preferential adsorption was also applied to mono-, di- and triglycerides. Monostearin and distearin were partially separated; having an original acetal number of 247, the mixture was separated into an upper eluate with an acetal number of 300.6 and a lower eluate

with an acetal number of 183.5 when passed through a column of silica gel. With alumina cream separation of the two components was even more pronounced, the acetal number for the upper eluate being 314, for the lower 141. This shows that the upper eluate was largely monostearin, the lower largely distearin. Experiments with other mixtures also led to partial separations of components.

Much more work needs to be done with this method of investigation of fats and fatty acids, such as study of the effects of different factors including the character of the adsorbent, the effect on it of various moistening agents and solvents used to carry the fat samples, pH, temperature, concentration of fat in solvent etc. H. P. Kaufman. *Fette und Seifen* 47, 160-2 (1940).

Rancidity Test

The diphenyl carbazide test or Stamm color reaction has been much used to determine the relative rancidity of fatty oils. Rancidity is supposed to be indicated by the appearance of a red color with the reagent, which Stamm believed to be produced by condensation products of diphenyl carbazide with free fatty acids, aldehydes and ketones. The literature shows conflicting results as reported by a number of investigators, so that further study seemed necessary.

Using a 10 per cent suspension of the reagent in paraffin oil and a 0.2 per cent solution in glacial acetic acid, the test was applied to a number of fresh and to two old samples of refined soybean oil. A number of the fresh samples gave as much color with the reagent in acetic acid as that given by the two old samples. Used in paraffin oil, the reagent gave a color with a number of fresh samples but none with the oldest sample used.

When the test was applied to refined castor oil samples whose

peroxide number and content of free fatty acids had been determined, there was no relation between the production of color and the composition of the oil samples. The conclusion was reached that the diphenyl carbazide reaction in its different modifications is unreliable as an indication of the freshness or rancidity development in an oil. A. Schramme and R. Neu. *Fette und Seifen* 47, 447-8 (1940).

Soaps from Single Oils

Sodium soaps of palm oil, semi-hardened whale oil, green sulfur olive oil, tallow, soybean oil, and pressed coconut oil were each studied at all stages of formation at kettle temperature close to 100° C. The soaps of the individual fats and oils are intermediate between the single pure salts of the fatty acids previously studied and the complex mixtures occurring in commercial soaps. The experiments were carried out on five-ton charges of fat in a ten-ton kettle. Portions of the phase-rule diagrams constructed for the different soap systems give some indication of the degree to which equilibrium is approached in the commercial process.

In general "grained soap" contains less soap and more salt than pure neat soap. This is also true of freshly fitted soap, except that here the contaminating phase is nigre. Judging from the results on coconut oil soap, better separation of neat soap is obtained in large-scale operations than is possible in the test tube.

The most interesting observation which can be made from comparison of the phase-rule diagrams of the different soaps is that all of them, with the exception of that for coconut oil soap, are merely slight variants of the diagram for pure sodium palmitate. Although sodium oleate is commonly regarded as a very soluble soap, its presence in a mixture of soaps does not extend the concentration range of the isotropic solution phase at 90° C. In fact, soybean oil soap, which contains the highest proportion of unsaturated fatty acid residues of 18 carbon-

atom chain, is salted out into neat soap and lye at a lower salt concentration than is pure sodium palmitate. The solubilizing effect of the double bond in the oleate chain is not sufficiently great to compensate entirely for the addition of two more methylene groups to the palmitate chain, in so far as salting out is concerned. James W. McBain, William J. Elford, and Robert D. Vold. *J. Soc. Chem. Ind.* 59, 243-52 (1940).

Soybean Selection

The experiment station produced a number of grades of soybeans considerably higher in oil (18.94-21.00 per cent) than ungraded mixtures. The inverse relation between fat and nitrogen observed by other investigators was confirmed. The oil of the developed grades did not differ from that of ordinary soybeans except in iodine number, which was slightly higher. I. T. Shugin. *Bull. Far East. Branch Acad. Sci. (U.S.S.R.)* 33, No. 1, 202-4; through *Chem. Abs.*

Fatty Acids in Seed Husks

Extraction of the bright orange-colored husk from the seeds of *Celastropus paniculatus* with petroleum ether yielded a bright-red solution which deposited white crystalline fatty acids after standing two weeks in a refrigerator. After removal of the solvent from the mother liquor the material was saponified, with the approximate yields: palmitic and stearic acids and a fraction melting at 90-4° C. which is sparingly soluble in ether and soluble in methanol and ethyl alcohol. 10-15 per cent; phytosterol, 0.8-1.0 per cent; a fat-soluble bright orange-red coloring matter decomposing slowly in air and rapidly in the presence of mineral acids, 2 per cent; saponified fatty matter 70 per cent. S. A. Warsi. *Current Sci.* 9, 134-5 (1940); through *Chem. Abs.*

Processing Fats

Fats or waxes containing unsaponifiable matter are saponified and decomposed with mineral acid. The unsaponifiable matter and fatty acid are collected, mixed with paraffin and neutralized with alkali. The

soap is removed by washing, and unsaponifiable matter is taken up with paraffin. K. Hirabayasi. Japanese Patent No. 128,433.

The Fat Outlook

(From Page 30)

Notwithstanding the competition of substitutes and the certain threat of synthetic glycerine as a barrier to speculative prices, the economic position of natural glycerine is definitely better than it was in 1914, and remains safe as long as consumer requirements are satisfied at reasonable competitive values.

HOW the soap and glycerine industries may be affected by the national defense program is a vital phase of the market outlook. In World War I a war service committee elected by the industry and certified by the War Industries Board to its various agencies cooperated with those agencies under the direction of the Food Administration. It is taken for granted that this industry will be no less cooperative with present defense agencies than they were during World War I. Moreover, our present form of self-organization as an Association, with fourteen years of seasoning experience, will be expected to do a better job for the national defense than was possible with the voluntary committee that served in World War I.

As a matter of fact, a long time viewpoint would indicate that there may be new opportunities on the horizon for soap makers. While soap statistics in the 1914-18 period are non-conclusive on account of distorting factors, the United States Department of Agriculture records show an increase of 50 per cent in consumption of soap fats during World War I. The decade that followed witnessed the greatest expansion in soap consumption of which we have any record.

In the last decade, however, per capita soap consumption has practically stood still, and regardless of frequent boasts on the state of cleanliness in the nation, the daily bath

is probably a myth to over two-thirds of our population. There are at present more automobiles than bathtubs in the United States. Referring to a certain western state, the *Commentator Magazine* says that the population of the state could be evacuated by automobile in four hours and only average three persons per car, but if an order went out for everyone to take a bath at the same time, sixteen persons would have to wait their turn at each tub.

War is a leveler and a considerable part of our population will come out of the so-called "arsenal" participation with better living conditions and greater regard to cleanliness than they have ever had before. New housing, modern plumbing, the training of men in camps, and the enforced cleanliness of person, clothing, and living conditions, should stimulate the custom of using soap until it becomes a habit that will carry over into peace time living, and create conditions favorable to that increase in per capita soap consumption which is so important to the growth of our industry.

If the soap history of World War I and the succeeding decade repeats itself in the present era, another material expansion in soap consumption can take place in the next few years. The cleanliness and sanitation publicity of our Association in coordination with individual promotion and brand advertising, have set the stage so that the industry is currently in an admirable position to take full advantage of the future expansion possibilities in soap consumption.

Chem. and Eng. Dictionary

The publishers of *Chemical & Metallurgical Engineering*, New York, have just published the new *Chemical & Engineering Dictionary*, 200 pages, which contains over 20,000 chemical and engineering definitions as well as a mass of other useful data for plant managers, superintendents, chemical engineers and industrial executives. H. Bennett was the compiler and editor-in-chief.

PRODUCTS

AND PROCESSES

Pumice Soap

A pumice soap is prepared by the cold process from 15 parts of coconut oil, 10 parts of tallow and 12.5 parts of 38° Be. caustic soda. After saponification, 10 parts of crystalline soda are dissolved in the soap and enough pumice crutched in to give a sufficiently firm product when cold. *Seifensieder - Ztg.* 67, 447 (1940).

Pine Resin Soap

Soap from a gasoline-insoluble pinewood resin is prepared without the application of heat by dispersing in water a pulverized gasoline-insoluble pinewood resin produced by extracting resinous wood with a coal-tar hydrocarbon, removing the hydrocarbon by evaporation, extracting the residue with a petroleum hydrocarbon and recovering a gasoline-insoluble resin. The dispersion is saponified with alkali to give a substantially neutral soap. Hercules Powder Co. British Patent No. 527,479.

Rust Spot Removal

A preparation containing a neutral-base marble dust, sulfonated oil, and methyl cyclohexanone, has excellent rust-removing properties and is useful for treating clothes marked with rust stains. It is not as drastic on fibers as the usual de-rusting solution of hydrofluoric acid. *Am. Perfumer* 41, No. 6, 53 (1940).

Kaolin in Soap

Soap to be filled with kaolin or with talcum is first made in the usual way and adjusted to neutrality. The main precaution is not to get a soap that is too thick. The powder is stirred to a fluid paste with water and this mixture worked well into the soap. Sodium silicate can also be added as filler. If the soap is made

by the cold or semi-boiled process the kaolin can be added to the hot fat before saponification. *Seifensieder - Ztg.* 67, 448 (1940).

Cholesterol in Soap

Cholesterol, separated from lanolin, and cholesterol esters such as cholesterol laurate and stearate, are recommended for inclusion in special high-grade soaps, particularly germicidal soaps, because of their unusual hydrophylic properties. These compounds mix well with soap provided they are first emulsified in an appropriate vehicle. The additive is stirred into 10 times its bulk of petroleum jelly, this being emulsified in water by passing through a homogenizer. *Am. Perfumer* 41, No. 6, 52 (1940).

New Soap Process

Fats are converted to soap through an intermediate stage of manufacture in which the alkyl esters of the fatty acids are produced. The fats are treated with an alcohol of low molecular weight under anhydrous conditions, the amount of alcohol used being 1.2-1.75 times the equivalent of the fat. Up to 0.5 per cent of catalyst is used. Under anhydrous conditions caustic soda or caustic potash in this small amount acts as a true catalyst. Alkyl esters are recovered in a practically quantitative yield from the reaction mass, together with practically pure glycerine. The reaction takes 1-2 hours at 30° C.

The high molecular alkyl esters are readily converted into soap by treatment, preferably under anhydrous conditions, with an equivalent amount of anhydrous caustic soda. Very pure soaps of a crystalline nature are obtained; hard potash soaps are produced not only from the glycerides of saturated fatty acids, but

also from those of unsaturated fatty acids. The product is anhydrous, salt-free, and light colored. The process is highly economical and the recovery of glycerine is cheap. The simplicity of the apparatus emphasizes the technical utility of the method. The final saponification may take place in the presence of water, soap cakes then being readily produced.

Oils and fats suitable for this method of conversion into soap include coconut, cottonseed, olive, palm, sardine, castor, whale, linseed, tallow and stearine. Du Pont de Nemours & Co. British Patent No. 6,494; through *Perfumery & Essen. Oil Record* 31, 359-60 (1940).

Degreasing Composition

A stable, homogeneous, liquid degreasing composition consists of "tallol" soap, a liquid hydrocarbon grease solvent, and an alkali phenolate. The amount of hydrocarbon is 25-75 per cent of the weight of "tallol" soap, but the composition will stand a large amount of dilution with more hydrocarbon. Curran Corp. Canadian Patent No. 393,354.

Leather Soaps

Saddle soap or leather soap may be made from the following:

	Parts
Tallow	10
Olive oil foots	5
Light colored rosin	1.5
Caustic soda, 38.6° Be.	6
Water	34
Glycerine	4
Hexalin	2
Marble dust or French chalk ..	1
Beeswax or montan wax ...	1

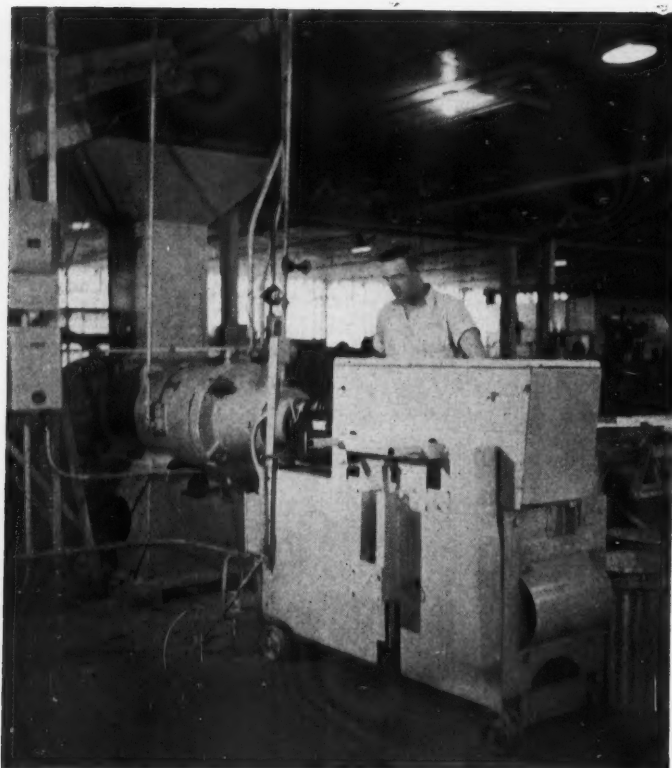
The fats and rosin should be properly saponified by the half boiled process, with the alkali dissolved in as little water as possible. After saponification add the glycerine, wax, and fine abrasive and stir well. When the mass has cooled to about 120° F. add the hexalin and crutch or mix. The solvent works in better if previously mixed with a little strong soap solution.

A further suggestion is to add 5 per cent of hexalin and 1 per cent of bentonite or other clay to a borax soap containing 1 per cent of free borax. Paul I. Smith. *Am. Perfumer* 41, No. 6, 52 (1940).

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Complete copies of any patents or trade-mark registration reported below may be obtained by sending 25c for each copy desired to Lancaster, Allwine and Rommel. Any inquiries relating to Patent or Trade-Mark Law will also be freely answered by these attorneys.

No. 2,223,664, Naphthalene Derivative, patented December 3, 1940 by Walter Salzer, Wuppertal-Elberfeld Germany, assignor to Winthrop Chemical Company, Inc., New York. The process which comprises oxidizing 3, 4-dihydro-6-methoxynaphthalene with a compound selected from the group consisting of perbenzoic and perphthalic acids in the presence of an organic solvent which is inert to the initial materials.

No. 2,224,243, Insecticide, patented December 10, 1940 by Charles Verne Bowen, Bethesda, Md., assignor to Henry A. Wallace, as Secretary of Agriculture of the United States of America, and his successors in office. An insecticide containing as its essential active ingredient, 2-furan acrylamide.

No. 2,224,622, Insect Repellent, patented December 10, 1940 by Frank A. Waples, deceased, late of Houston, Texas, by Cora R. Waples, executrix, Houston, Texas. A composition of matter which on being burned will give off a light smoke for driving off mosquitoes and the like comprising charcoal, resin, wood tar and vegetable pulp all mixed with sufficient water to mold under pressure into suitable shapes.

No. 2,224,723, Insecticide, patented December 10, 1940 by Carleton Ellis, Montclair, N. J., assignor to Standard Oil Development Company. A horticultural contact insecticide consisting of nitrated olefins, said olefins derived from petroleum. A contact insecticide which comprises nitrohydrazones.

No. 2,224,889, Detergent Germicide, patented December 17, 1940 by Arthur L. Waugh, Duluth, Minnesota. A germicidal detergent solution for sterilizing articles immersed therein containing from 3 to 5 per cent formaldehyde, ethyl alcohol, acetone, methanol and approximately 10 per cent water.

No. 2,224,890, Detergent Germicide, patented December 17, 1940 by Arthur L. Waugh, Chicago, Illinois. A liquid detergent germicidal composition containing approximately four parts formaldehyde, six parts water and fifteen parts of a mixture of solvents consisting of methanol and acetone, said solvent mixture containing from one-half as much to twice as much methanol as acetone.

No. 2,224,985, Process for Soap, patented December 17, 1940 by Ralph H. Potts, La Grange, and John E. McKee, Western Springs, Illinois, assignors to Armour and Company, Chicago, Ill. The process of making soap, which comprises hydrolyzing a marine oil to produce a fatty acid mixture, fractionally distilling the mixture, controlling the operating conditions of the fractional distillation procedure to produce a C_{18} marine oil fatty acid-containing fraction containing less than 3 per cent of C_{20} and C_{22} fatty acids, subjecting said fraction to hydrogenation, and saponifying said fraction.

No. 2,225,392, Waxing and Polishing Composition, patented December 17, 1940 by William O. Pool and James Harwood, Chicago, Ill., assignors to Armour and Company, Chicago, Ill. A waxing and polishing composition containing, as a waxing constituent, an N-alkyl phthalimide in which the alkyl group contains at least six carbon atoms.

No. 2,225,573, Insecticide, Fungicide, patented December 17, 1940 by Henricus Jacobus Charles Tendeloo, The Hague, Netherlands, assignor to Shell Development Company, San Francisco, Calif. As an insecticide, fungicide, bactericide and the like, a preparation containing as an active ingredient an organic sulfide having at least one sulfur atom attached to two directly connected carbon atoms.

No. 2,225,867, Parasiticial Compositions, patented December 24, 1940 by Loren C. Hurd, Glenside, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa. A fungicidal composition suitable for use on living plants which comprises at least four

parts of a copper oxide to one part of zinc oxide.

No. 2,226,075, Soap Product, patented December 24, 1940 by Charles S. Rowe, Wilmington, Del., assignor to E. I. du Pont de Nemours & Company, Wilmington, Del. A flexible self-sustaining water-soluble sheet having detergent properties comprising soap as a major constituent and a hydrophilic polymerized vinyl compound.

No. 2,226,177, Deodorant, patented December 24, 1940 by John W. Orelup, Summit, and Ernst Ohlsson, Short Hills, N. J. A composition of matter for use in deodorizing the human body without inhibition of normal perspiration containing as its active ingredient a substantially water insoluble alkyl substituted hydroquinone in a quantity sufficient to have substantial anti-oxidant effect, but insufficient to render the composition toxic, in a neutral non-toxic carrier having no deleterious action on the skin, said composition being adapted to be applied directly to the body to deodorize the same.

No. 2,226,389, Nicotine Insecticide, patented December 24, 1940 by Ray Riley, Long Island City, N. Y., assignor to The Permutit Company, New York, N. Y. An insecticide comprising finely divided insoluble carbonaceous ion-exchange material prepared by reacting carbonizable material with a concentrated dehydrating agent and carrying nicotine as the exchangeable part thereof, in insoluble and non-volatile form, the particles of said preparation being black, clinging to leaves, being denser than water, and being stable as regards heat and moisture, the concentration of nicotine being at least about 3 grams per 100 cc. of a mass of wet particles.

No. 2,226,672, Insecticide, patented December 31, 1940 by Lloyd E. Smith, Washington, D. C.; dedicated to the free use of the People in the territory of the United States. An insecticide, containing as its essential active ingredient, p-chloroacetanilide. An insecticide, containing as its essential active ingredient, p-bromoacetanilide. An insecticide, containing as its essential active ingredient, p-iodoacetanilide.

No. 2,227,203, Manufacture of Soap, patented December 31, 1940 by Ashton T. Scott, Ardmore, Pa., and Charles R. Brown, Champaign, Ill., assignors to The Sharples Corporation, Philadelphia, Pa. In a treatment of black liquor, the process comprising separating from said black liquor a crude tall oil soap mixture comprising soaps of resin and fatty acids, saponifiable constituents and impurities including lignin, mixing said mixture with an alkali and heating the resulting mixture until the saponifiable constituents are substantially completely saponified, and thereafter separating impurities from the soaps of said mixture.

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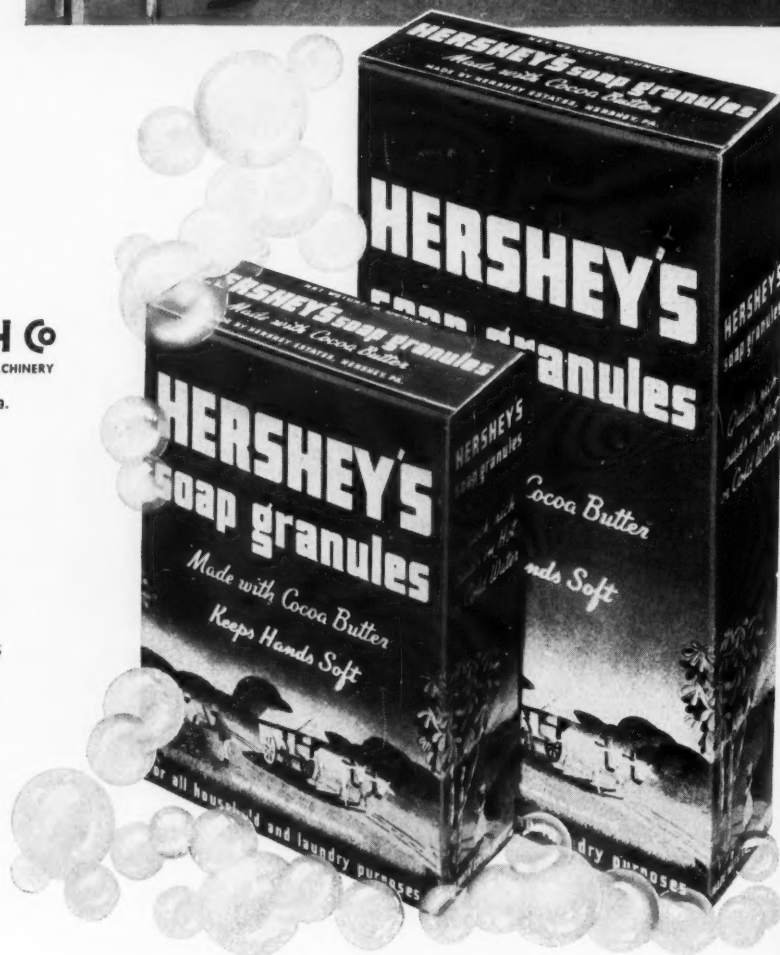
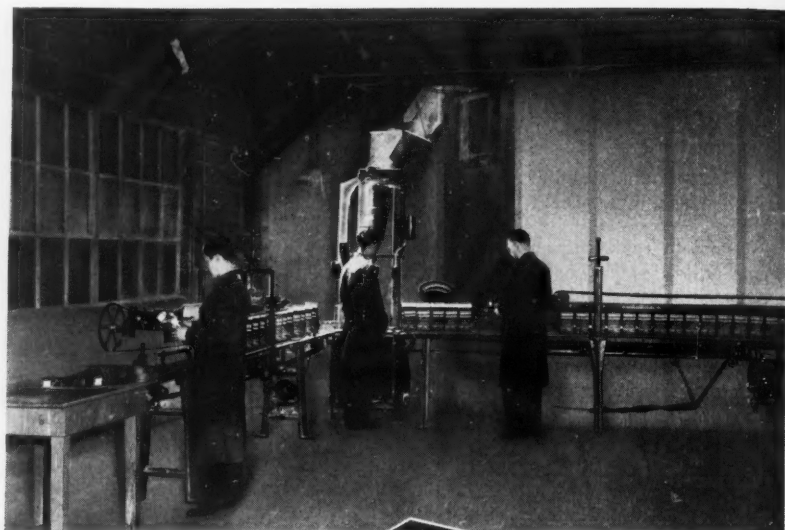
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NEW EQUIPMENT

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783—Time Controlled Dispenser

A new type of soap dispenser, equipped with a time control to reduce soap waste, was recently put on the market by Sav-Mor Products Co., New York. These are being loaned without charge to users of soap purchased from the company. One filling of the chromium plated steel and brass dispenser is said to deliver 324 measured quantities of soap. After one measured quantity has been used, the manufacturers state, a vacuum control timing device prevents any more soap from being pumped out for several seconds.

784—Sprayer Catalogue

Dobbins Manufacturing Co., Elkhart, Ind., is now distributing its new catalogue of spray machinery, No. 46. All types of sprayers and dusters for insecticides, floor oils, soaps and disinfectants are described and illustrated. Copies are available.

785—Dissolved Oxygen Recorder

The "Cambridge" dissolved oxygen recorder just introduced by Cambridge Instrument Co., New York, is said to have sufficient sensitivity that dissolved oxygen in feed water can be measured to one part in 400,000,000. The amount of dissolved oxygen in boiler feed water is an important source of corrosion and until the new instrument was developed, the only means of determining dissolved oxygen was a chemical method, it is said, requiring considerable time and producing only spot determinations. The instrument is completely automatic and provides a

continuous indication and record of dissolved oxygen entering the boiler.

786—Emollient and Emulsifiers

Two new booklets recently issued by Atlas Powder Co., Wilmington, Del., describe the uses of three Atlas products in cosmetics and toiletries. Formulations are given for the inclusion of "Arlex," an emollient containing hexitol, in shaving cream, lotions and cosmetic creams, and for the use of "Arlacel A" and "Arlacel B," emulsifiers, in anti-perspirants and other cosmetics.

787—Closing Device for Presses

D. R. Sperry & Co., Batavia, Ill., recently announced a new electrically-operated closing device for filter presses. Known as the Sperry type ECH, this device is said to incorporate features which provide easier, safer, more economical operation and more precise control of the press. It can be applied to existing installations without making extensive alterations in the equipment, say the manufacturers. Full particulars on request.

788—A.C.C.C.E. Directory

The sixth edition of the directory of the members of the Association of Consulting Chemists and Chemical Engineers, Inc., New York, has just been published. Included in it are lists of members arranged both alphabetically and geographically, one-page statements from each member describing his and his organization's qualifications and specialties and an index listing the members according to the type of services in which they are specially qualified.

789—Wax Bulletin

A bulletin dealing with certified floor wax and giving the details of a study of floor waxes in general

when applied to different types of floor surfaces such as linoleum, marble, terrazzo, tile, wood, etc., has just been released by United States Testing Co., Hoboken, N. J. The bulletin covers not only the theory behind a non-skid product in the floor wax field but also details the procedure by which the tests were run. Water resistance and coefficient of friction tests are included. Copies of the bulletin, Testing League Bulletin C-26, are available.

780—New Monsanto Booklets

Two new booklets have just been published by the phosphate division of Monsanto Chemical Co., St. Louis, relating to products manufactured by the division. One booklet gives detailed information about principal uses, grades produced and containers used in marketing the division's complete line. The other booklet, entitled "The Arochlors," gives the physical properties and suggested applications for eleven members of this group of synthetic resins.

Fats for Germany

With the complete capitulation of France it becomes of considerable importance to attempt to analyze the effects of her surrender and benefits to Germany so far as the chemical industries are concerned. Among many phases of this is the enormous fat and soap works of Marseilles, which Germany has especially welcomed. While dependent in part on oils imported from Africa, great quantities of native olive oils are refined there. Another aspect of the capitulation of France is the opening up to Germany of the resources of Spain. *Industrial Chemist* 16, 199-200 (1940).

New Textile Year Book

The American Association of Textile Chemists and Colorists has just issued its 1940 Year Book, volume XVII, containing lists of officers, committees, and sub-committees as well as reports of meetings and of work accomplished by the various committees. A new tentative test for mothproofing is included in the section devoted to testing methods.

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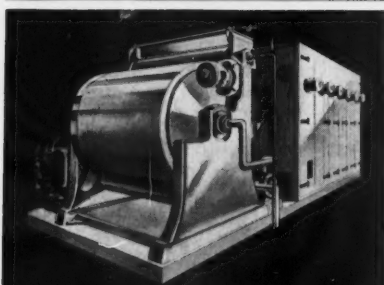
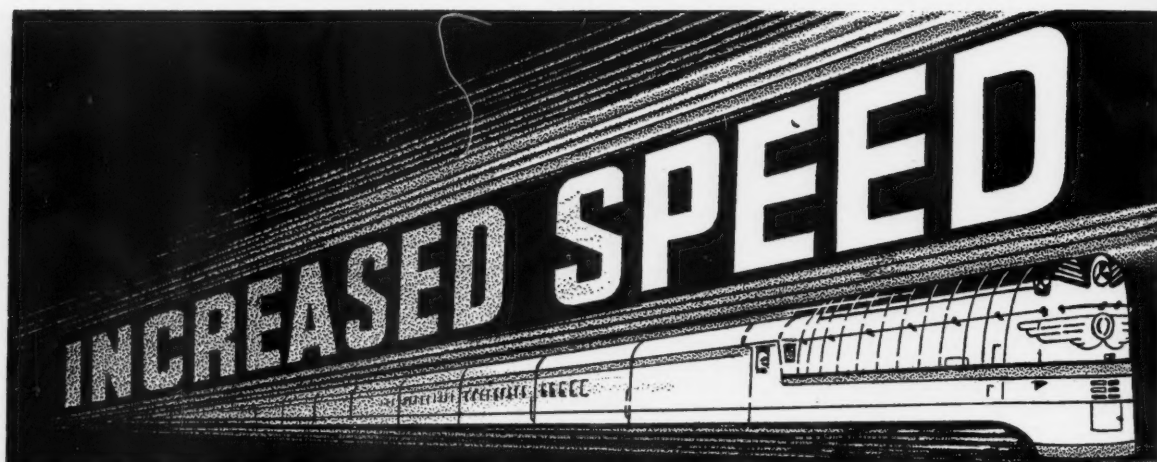


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Germicidal Activity of Soaps (From Page 37)

common fatty and rosin acids in soaps varies from 9.0 to 10.4, depending upon the individual acid and concentration. Sodium laurate and resinate have characteristic pH values lower than those of the principal fatty acid soaps found in the usual commercial soaps. Thus, the influence of the common ion added with the 0.01 per cent sodium carbonate buffer was as great with those materials as with any of the materials studied. Increasing the pH of these soaps to 10.2 with Na_2CO_3 did not alter appreciably their germicidal properties. The addition of 0.01 per cent sodium carbonate to sodium stearate and sodium palmitate, which have pH values without the addition of buffer slightly higher than 10, did not affect appreciably the pH values. Therefore, for the sake of uniformity sodium carbonate was used in all solutions. The small common ion effect was the same for all solutions.

To determine the influence of sodium carbonate buffer at the higher concentration of 0.2 per cent, and

thus at the corresponding higher pH value of about 11, samples of slash pine rosin soaps, sodium laurate and sodium oleate were tested at about pH 10 and 11 using 0.01 and 0.2 per cent sodium carbonate, respectively. The results of this study, as shown in Table 4, indicate that increasing the pH value from approximately 10 to 11 does increase the germicidal action of the three soaps at the concentrations tested.

Care was taken, therefore, not to exceed pH values common to 1.0, 0.5, and 0.25 per cent solutions of commercial soaps. The germicidal activity under these conditions should reflect primarily the activity of the soaps themselves.

Fatty acids and rosin acid soap solutions were prepared, as described, with sodium carbonate at pH 10.2 and tested at 30° C. using *Staphylococcus aureus* as the test organism. Typical data from determinations on solutions containing 1.0, 0.5, and 0.25 per cent fatty acid, rosin or rosin acids in the form of soap are given in Table 5.

Table 3.—Influence of 0.01 per cent Sodium Carbonate Buffer on Germicidal Action of Sodium Laurate and Sodium Resinate, using *Staphylococcus aureus* as the test organism.

Soap solution	Concentration of solution	pH of solution ²	Plate count ¹			
			Exposure time in minutes			
			2	5	10	20
Per cent						
Sodium laurate with buffer	0.25	10.2	256	192	92	88
Sodium laurate without buffer	0.25	9.2	248	144	108	47
Sodium resinate with buffer	0.25	10.2	184	105	85	52
Sodium resinate without buffer	0.25	9.4	368	206	138	63

¹ Control plate count 3 to 4 thousand.

² pH measured with a glass electrode (Beckman pH meter).

Table 4.—Effect of pH on the Germicidal Activity at 30° C. of Soap Solutions buffered with Sodium Carbonate using *Staphylococcus aureus*.

Soap solution	Concentration of solution	pH of solution	Plate count ¹				
			Exposure time in minutes				
			1	2	5	10	20
Made from							
Per cent							
Slash pine Rosin	0.25	10.0	251	184	105	85	52
Slash pine Rosin	0.25	11.1	42	10	1	0	0
Lauric Acid	1.0	10.0	22	12	9	8	6
Lauric Acid	1.0	11.1	52	17	5	0	0
Oleic Acid	1.0	10.2	576	20	3	2	2
Oleic Acid	1.0	11.1	196	29	1	0	0

¹ Control plate count 3 to 4 thousand.

The counts in Table 5 show that with *Staphylococcus aureus* as the test organism the rosin soap solutions at concentrations of 1.0 and 0.5 per cent have greater germicidal activity than equivalent concentrations of fatty acid soaps.

With this organism there is little or no difference in the bactericidal activity of rosin soap solutions made from either longleaf or slash pine rosin at concentrations of 1.0, 0.5, and 0.25 per cent. Soap solutions made from oxidized rosin are less germicidal than soaps made from normal gum rosin. Rosin soap made with pyroabietic acids is more active than that made with normal gum rosin. In 0.25 per cent solution the sodium salts of abietic, dihydroabietic and tetrahydroabietic acids are more effective in killing the test organism than the other rosin soap solutions. The sodium salt of dehydroabietic acid was definitely less effective as a germicide at 1.0, 0.5, and 0.25 per cent concentrations than those of abietic, dihydroabietic or tetrahydroabietic acids. The salts of the last named acids were so active at concentrations of 1.0, 0.5 and 0.25 per cent that no distinction could be made. Considerable variation is shown in the activity of the fatty acid soaps made from individual fatty acids. Similar variations have been pointed out by previous workers (8, 18).

With *Staphylococcus aureus* as the test organism, the soaps of oleic and linseed oil acids were slightly more effective than coconut oil soap. This agrees with the observations by Walker (18) and Cade and Halvorson (2) that the soaps of the unsaturated fatty acids were active against this organism. The soaps of caprylic, stearic and palmitic acids were less effective. The soaps of myristic and lauric acids were relatively more active against this organism than previous reports seem to have indicated.

For purposes of comparison with a germicide of known activity, results with equivalent concentrations of phenol (pH 6.2) were included in

[†] Rosin soap solutions made with abietic acid were tested when prepared as the germicidal activity decreased on standing, due no doubt to oxidation.

Table 5 and indicate that rosin soap solutions are more active as germicides under the conditions of these tests than equivalent concentrations of aqueous phenol.

To determine the comparative activity of the rosin soaps made from dehydroabietic, dihydroabietic and tetrahydroabietic acid against *Staphylococcus aureus*, tests were run on 0.1 per cent solutions. These results are presented in Table 6.

The results in Table 6 show that the order of increasing germicidal activity of these rosin acid soaps is as follows: Dehydroabietic, abietic, dihydroabietic, tetrahydroabietic. With this organism, there seems to be a direct correlation between the amount of hydrogen in the rosin acid molecule and germicidal activity.

(To be concluded.)

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Table 6.—Comparative Germicidal Action at 30° C. of Rosin Soap Solutions at pH 10.2 against *Staphylococcus aureus*.

Soap solution	Concentration of solution	Exposure time in minutes				
		1	2	5	10	20
Made from	Per cent					
Dehydroabietic Acid	0.1	1626	1280	868	764	320
Abietic Acid	0.1	1152	704	280	180	20
Dihydroabietic Acid	0.1	15	7	4	1	2
Tetrahydroabietic Acid	0.1	0	0	0	0	0

¹ Control plate count 3 to 4 thousand.

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Table 5.—Germicidal Activity at 30° C. of Rosin and Fatty Acid Soap Solutions at pH 10.2 against *Staphylococcus aureus*.

Soap Solution	Plate Count ¹														
	Concentration of Solutions														
	1.0 Per Cent					0.5 Per Cent					0.25 Per Cent				
	Exposure time in minutes					Exposure time in minutes					Exposure time in minutes				
	1	2	5	10	20	1	2	5	10	20	1	2	5	10	20
Made from															
Slash pine Rosin.....	12	0	0	0	0	6	0	0	0	0	251	184	105	85	52
Longleaf pine Rosin.....	0	0	0	0	0	5	0	0	0	0	238	118	51	32	15
Oxidized Rosin	0	0	0	0	0	46	31	41	2	1	616	528	368	252	240
Pyroabietic Acid	1	0	0	0	0	0	0	0	0	0	20	19	3	0	0
Dehydroabietic Acid	28	0	0	0	0	49	22	5	4	1	584	520	320	248	136
Abietic Acid	2	1	0	0	0	0	0	0	0	0	10	0	0	0	0
Dihydroabietic Acid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tetrahydroabietic Acid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Caprylic Acid	1344	832	768	512	384	704	640	640	640	640	1472	1349	906	768	704
Lauric Acid	22	22	9	8	6	44	6	5	2	3	256	256	192	92	88
Myristic Acid	42	38	38	37	37	78	52	48	42	9	93	58	19	16	11
Palmitic Acid	2	..	..	..	..	2112	1472	832	412	264	2048	2048	1344	1280	400
Stearic Acid	2	..	..	..	..	1920	1826	1762	1536	1536	1280	1024	502	502	502
Oleic Acid	576	20	3	2	2	768	512	77	4	4	960	768	384	320	36
Linseed Oil Acids.....	448	124	8	8	0	512	448	246	76	55	2048	1920	704	448	77
Coconut Oil Acids.....	258	156	78	76	34	704	576	224	142	92	832	832	576	384	124
Palm Oil Acids.....	1024	448	84	28	23	1024	512	182	92	50	640	440	256	94	37
PHENOL ³	114	7	0	0	0	1664	1408	1036	176	20	1664	1664	1664	1600	640

¹ Control plate count 3 to 4 thousand.

² Not tested due to formation of rigid gel at this concentration.

³ Phenol tested in water solutions pH 6.2 standardized according to Ruehle and Brewer (14).

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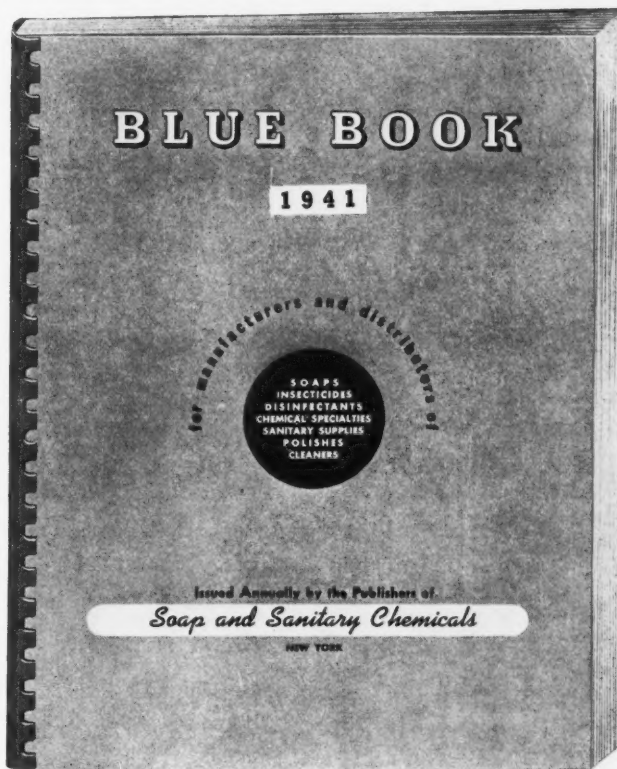
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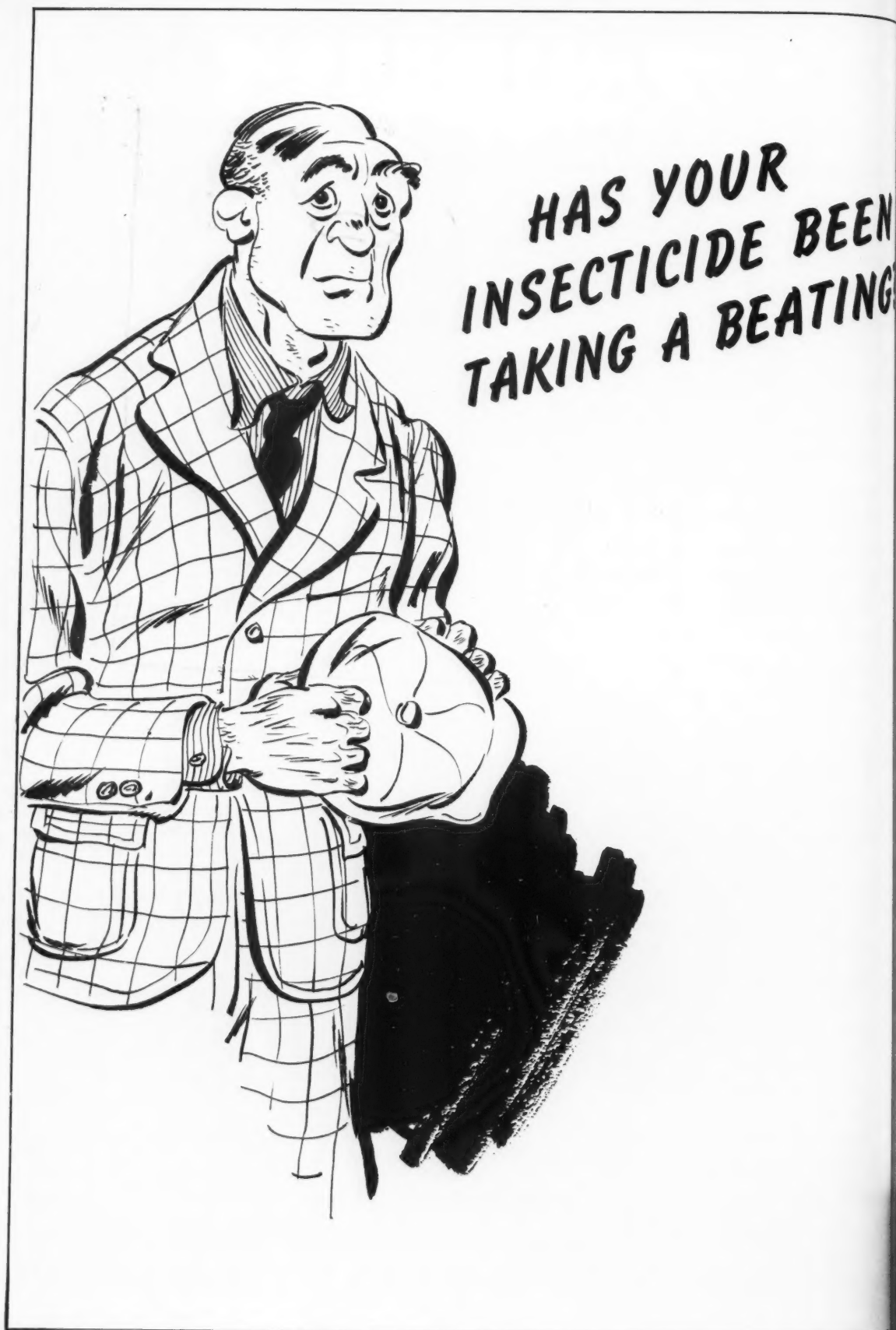
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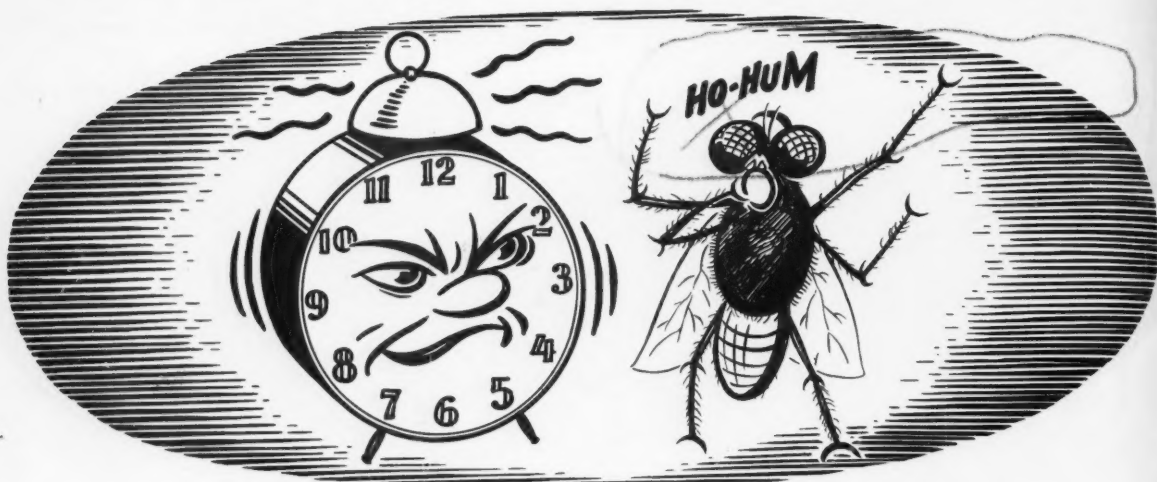
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All of the above products which we sell to the wholesale trade for distribution to the farm user are guaranteed to meet Commercial Standard CS70-38.

NOTE: These Stock Dips are manufactured from "chilled" oils. This means that the Dip will be free-running even in sub-freezing weather. A free sample will be sent upon request, and we shall be pleased to quote on any strength Stock Dip in any quantity desired.

St. Louis, Mo.—**BAIRD & McGUIRE, INC.**—Holbrook, Mass.

SANITARY PRODUCTS

A SECTION OF SOAP

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

ONE of the largest manufacturers of household insect spray in the country is reported to have contracted with a large producer of fats and fatty acids for their output of an entirely new synthetic insecticide base. This is one of several new synthetics reported about ready to be put on the market during the past year, but is the first of these about which anything definite in a commercial way has been heard. If we may judge by past performances, it may be several years before this product reaches the ultimate consumer in a finished spray. It took three to five years of testing and research of those synthetics now commercial success before ever an ounce of them was sold in a fly spray. All of which goes to show that from the chemist's laboratory flask to the ultimate consumer is more often a period of years rather than months,—and insecticides cannot be manufactured from laboratory ideals.



AFTER having discussed the floor wax situation with several manufacturers recently, we must conclude that the industry is peopled with magicians or else an ever-increasing quantity of lower grade wax is coming on the market. At the figures for which raw materials, especially carnauba wax, have been selling during recent months, many floor wax prices are low enough to be viewed with more than suspicion.

Harking back to the days when the market for hard automobile soap was a sizeable

affair, we are reminded that constant quality reduction to meet lower and ever lower prices, eventually just about wiped out the tonnage business in this type of soap. The same thing could happen in floor wax, and it will happen if manufacturers do not stop and take their bearings before it is too late.



JUDGING from reports here and there, the Federal Trade Commission is looking into the insecticide industry with more than casual interest. Investigators for the Commission appear to be studying label and advertising claims on a number of insecticides, mostly in the household field. It may be something of a "fishing expedition" among insecticide manufacturers, but such activity is perfectly within the rights of the F.T.C. under the Wheeler-Lea Act.

Do not suspect one of your competitors if a representative of the F.T.C. calls and asks you numerous and rather searching questions about your business and your products. We do not believe that competitive jealousies play any part in this present check-up of insecticides. Neither do we know of any reason why they should select insecticides to investigate at this time, but the fact remains that they appear to be doing just that.

In view of the strong law which the F.T.C. has at its command in this type of work, we suggest that it is undoubtedly the better part of valor to cooperate when and if any such investigation reaches you.

Droplet Size Of Insecticides

If the mist is too fine when sprayed, it may reduce the effectiveness of a liquid insecticide

*By Dr. E. M. Searls**

University of Wisconsin

MANY improvements have been made in sprays, sprayers, and spraying methods during the last few years. From the point of view of the spray-buying public, the work of the NAIDM and the adoption of the O.T.I. have taken much of the guess out of spray buying. With the availability of accurately labeled sprays, the quality of sprayers has also improved. The consumer may purchase an A-grade fly spray and any one of several good sprayers. Circulars with the sprayers and the spray materials instruct the buyers how to use the equipment, and, where heeded, the results are usually a well satisfied customer.

There are some exceptions to this general rule, however. Some buyers complain that they do not receive the same results with a spray each season. Others complain that sprays, even those made and guaranteed by well known and highly reputable companies, will not kill or will not repel. It seems to me that, in many cases, the cause of these complaints may be found in the desire of the operator to use a very fine mist, to produce a spray which is so fine that it envelops the entire area sprayed. Such a spray is apt to be so fine that, contrary to the operator's expectation, it is practically useless.

There seems to be a general opinion among fly spray users that, in order to be effective, the spray must be divided into a veritable fog. This attitude has been fostered by many salesmen of sprays and spray-

ers. A representative of a large sprayer manufacturing company visited me at my office not long ago to demonstrate the effectiveness of his company's atomizer. He placed about 50 cc. of oil in the machine, started the machine and held his calling card in the spray about two feet from the nozzle, while the entire 50 cc. was sprayed out. As evidence of the superior efficiency of the machine, he then showed me that the card had no trace of oil upon it. Briefly stated, that salesman tried to persuade me of the highly desirable nature of his machine by showing me that it dispersed the spray into such fine drops that it would not wet anything. I wonder how he planned to kill the insects if the spray would not touch them. It would be difficult, indeed, to kill cockroaches with such a spray.

It is well known that insects vary widely in their resistance to oily sprays and to certain insecticides in oily sprays. Three gallons of highly refined kerosene oil containing 1 per cent of standard 20-1 pyrethrum extract is sufficient to give an excellent kill of potato leafhoppers in an acre of potatoes. In this isolated case, a very finely divided spray is both effective and economical. It is necessary to wet other insects, at least partially, with a stronger dilution before a good kill is obtained. The more resistant forms require an extensive covering with at least an A.A. grade spray.

There appear to be certain good reasons for producing finely divided sprays. The tendency has been to produce finer and finer mists with the usual straight pressure spray-

ers by using higher and higher pressures. This has, perhaps, been necessary because not very long ago, aqueous sprays were applied in such coarse drops that they were ineffective.

In general, there are two ways of producing sprays, by straight pressure and by atomization. In the first instance, the fluid, under high pressure, is dispersed at a nozzle which consists principally of a jet. In the second instance the nozzle used is, in effect, a venturi tube or some modification thereof. The stream of fluid is dispersed by a stream of air, or other gas, both under relatively low pressures. Although atomization is a general term applied to the dispersion of fluids into sprays, it has come to mean the second method listed as opposed to sprays produced by a simple jet.

It seems that the tendency toward finer droplets in a spray has continued even though the more effective principle of atomization is used in applying oily sprays. This method can produce as fine a mist at 20 pounds pressure as a few hundred pounds applied through a straight pressure jet. This is true even when water is used as a solvent or carrier for the insecticide. Oil, instead of water, is used in the usual household or cattle fly spray. Oil, with its very low surface tension, is much more easily dispersed than water. This fact, combined with the more efficient dispersing principle of atomization seems to produce a spray so fine that it has exceeded the need for a fine spray.

* Address before the 27th annual meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., New York, Dec., 1940.



CONTRARY to the usual belief, there are certain very definite reasons why a spray consisting of very tiny droplets is not so effective as a coarser spray. If an ordinary hand atomizer with a fixed nozzle made to apply sprays with a kerosene base is used with a cattle fly type spray containing a base oil of 70 seconds or more Saybolt viscosity, the result is usually a mist so fine that it is practically impossible to apply it to a cow. It is true that the cow will be enveloped in a fog of spray, but very little, if any, will lodge upon the cow. The same sprayer, filled with a kerosene base spray, will wet the cow quickly. One reason for this failure of the fine mist may be found in Stokes' Law of Resistance. According to this law, the loss of

velocity of droplets of different sizes is inversely proportional to the square of the radius. In other words, droplets of 20 microns diameter (1 micron = .001 mm.) lose their velocity four times as fast as droplets of 40 microns diameter. This means that the very small drops have practically no velocity as soon as the force of the sprayer is spent.

Stokes' Law applies equally well to all sprays. A household fly spray broken into too minute droplets is no more effective against insects than the equally fine cattle fly spray was in wetting the cow. When directed at some insects, very fine droplets are not so effective as larger ones. The larger drops are not carried by the currents of air as they are turned aside by the insects' bodies.

They have sufficient momentum to break through and hit the insects directly. This places the insecticides in a position to kill. Contact insecticides are ineffective unless they *actually touch* the insects.

Since momentum is equal to mass multiplied by velocity, there is no momentum when the velocity is lost. Thereafter, droplets which are too fine drift aimlessly about. Even while they are still impelled by the force of the sprayer they are ineffective. In the case of the fine drops from the heavy oil mentioned above, the droplets had so little mass that they had little energy. They could not penetrate to the cow through the deflected air currents. They only followed whatever air currents there were as a result of the pressure from the sprayer. They drifted aimlessly around and away from the cow.

This condition of aimless drifting may do much to account for the apparent failure of a contact insecticide in heavy oil to give as good a kill in a Peet-Grady chamber as it does when applied in a light oil. This is, in all probability, due to the fact that the usual atomizer used in Peet-Grady chambers has a fixed nozzle adjusted to the satisfactory application of oils within the kerosene range. When oils of high viscosity are used with such an atomizer the resultant spray is a fog made up of very fine droplets. They soon lose their momentum and direction in accordance with Stokes' law. With no momentum and with little mass they could not be expected to hit the test flies as effectively as larger droplets.

This suggestion is based upon a field observation. A Peet-Grady chamber was not available for the test so a livestock stable was used. Seven per cent of a well known insecticide was mixed in a refined kerosene base and in a refined 100 viscosity oil. An electrically driven atomizer with an adjustable nozzle was used. The nozzle was adjusted to produce fine droplets on brown paper at 3 feet with the kerosene base. In the first part of the test 200 cc. of one material was sprayed upon the flies at one end of the stables. Then an

equal amount was used at the other end. There was a very obvious difference in the performance of the two sprays. The spray produced from the kerosene base soon settled to the floor. The other spray was so fine that it remained drifting in the air for several minutes. The kerosene base spray knocked down practically all of the flies within 15 minutes. A great number of apparently uninjured flies were found where the 100 viscosity base spray was used. In fact the knock down was comparatively small.

Two days later the experiment was repeated under approximately similar conditions of temperature and fly numbers. This time, after the kerosene base spray was applied, the nozzle was adjusted to produce similarly sized drops with the heavy oil and the heavy oil applied. There was no observable difference in the effectiveness of the two sprays at the end of 15 minutes. It is realized, of course, that this was not a controlled experiment but the results were quite obvious and certainly most indicative.

WITH these observations in mind, it does not seem to me that a method for evaluating repellency in cattle fly sprays after the manner in which fly sprays are evaluated, is so remote. When the relation of drop size to effective application of oily sprays is better understood, we may be able to use additional and better known correlations. It appears that, for most repellents, repellency may be stated as a corollary to the killing power of the insecticide. This may be determined by use of a Peet-Grady chamber. It may be possible to correlate the duration of the repellent action with the volatility of the base oil and the stability of the insecticide used. If we knew the repellent powers of an insecticide and the length of time the repellency persisted, we would have a satisfactory measure of its value. The first requirement seems to be a better knowledge of the effect of drop size on the effectiveness of an oily spray.

There is another barrier which may serve to prevent very fine droplets from reaching their objective. Every body is surrounded by a "skin" or atmosphere which is different from the surrounding atmosphere and almost a part of the body itself. For instance, the so-called "skin," or atmosphere, of a window effectively insulates it from the excessive passage of heat or cold through the glass. The "skin" surrounding a cow effectively prevents the penetration of very small droplets without momentum and with very little mass. When low viscosity oil is used in a sprayer and larger drops are produced, velocity is maintained much longer. Their larger mass and velocity cause them to penetrate this "skin" directly to the hair of the cow where they remain to serve a useful purpose. Electrostatic charges may also increase the difficulty with which very small droplets actually come in contact with larger bodies.

It is not intended here to suggest that oily sprays should not be finely dispersed. Droplets which are too large are as unsatisfactory as droplets which are too small. Too large droplets fall quickly from the air stream produced by the sprayer. They are not apt to reach insects which are at all remote from the sprayer. If they are driven to the position of the insects they do not cover well. They cause slippery floors and leave large splotches of oil temporarily upon furniture and other household furnishings. When used against flies on cattle, they are apt to soak the animals quickly and cause injury.

In a study[†] of the effect of viscosity on the drop size of oils sprayed through a fixed nozzle atomizer adjusted to the application of kerosene oil, it was found that drops of less than 17 microns diameter seldom hit the target at which they were directed. This target was 48 inches from the nozzle of the sprayer. Even though the force of the atomizer was sufficient to drive them beyond the targets on which the droplets were caught, very few droplets of less than 34 microns were recorded. Such small droplets had so little mass that

they merely followed the draft of air from the sprayer around and beyond the targets. Droplets of about 70 microns diameter were effective in hitting the targets and seemed to be about the average size of those recorded. They also followed the air stream very well but had sufficient mass to break through the air currents and reach the targets. Few drops of greater than 200 microns were recorded on the target. It is probable that drops of that size and larger fell from the air stream. The research mentioned was not intended to study the effectiveness of various drop sizes in the application of oils by atomization. A critical study of that problem is still necessary.

[†] Searls, Ed. M. and Fred M. Snyder, 1936. The Relation of Viscosity to Drop Size and the Application of Oils by Atomization. *Journal of Economic Entomology*, 29(6) 1167.

New Insecticide Material

A potentially important new insecticide raw material known as the Thunder God Vine, a botanical second cousin of the bright-berried bittersweet, is currently under investigation by the U. S. Dept. of Agriculture. The active principle is found in the bark of the roots, and is reported to be used to a considerable extent in powder form by farmers in the interior of China, where the plant grows. Its chemical nature, still unknown, is being intensively investigated in the hope that it may become possible to produce it synthetically. Preliminary experiments are regarded as promising. Powder prepared from the vine roots proved effective against the codling moth and against two species of cabbage-eating caterpillars. *Science Supplement* 92, November 8, p. 10 (1940).

Indian Derris

Thick and thin roots of *Derris elliptica* from Trichur, South India, contained 8.93 and 9.24 per cent of water respectively, 20.78 and 18.18 per cent of ether extract, and 9.95 and 6.33 per cent of rotenone, respectively, as received. C. S. Venketasubban. *Indian J. Pharm.* 1, 130; through *Chem. Abs.*

THE LEGISLATIVE TREND

What happened in 1940 and what is happening
in legislation affecting insecticides and disinfectants

By Leonard C. Fardwell*

McCormick & Company

IN legislative matters affecting the insecticide and disinfectant industries, there has been some activity during the past year, but nothing to the extent which is anticipated during 1941 when most of the state legislatures of the country will be in session. A somewhat detailed review of proposed legislation of the past year along with comments as to the future trend is in order at this time. During 1940, only twelve state legislatures and the national Congress were in session. The bills considered and disposition where the data is available, are summarized and commented upon in the following:

U. S. Congress—S. 1032, companion to H. R. 331. Their purpose—to reduce Government contract limitation under the Walsh-Healey Act, from \$10,000 to \$2,000. Hearings on these bills were closed on March 13 and no further hearings were scheduled.

Kentucky—House Bill 83, same as Senate 8. Food and Drugs Advertising Bills. To outlaw false advertising of foods, drugs, devices and cosmetics; requiring \$25 permit fee annually from all persons manufacturing foods, drugs, devices and cosmetics for sale in Kentucky. Died in Committee. H. B. 446 was substituted for H. B. 83. H. B. 446 died. No action on Senate 8. S. 202 substituted for S. 8. S. 202 died.

House Bill 328, a completely restrictive drug sales measure if enforced to the letter of the law as it would prohibit any person to "vend at retail" unless he was a registered pharmacist. Died.

Mississippi—House Bill 150 would create a Pure Food and Drug Commission, defining its powers, duties and authority; requiring the registration of and providing for the regulation and sale of drugs and barbituric acid

preparations in the State; fixing penalties for violation of the act. Wording broad enough to require the registration of all foods and drugs with the newly formed Pure Food and Drug Commission, at \$5 for a single preparation and not to exceed \$100 per manufacturer; purporting to regulate the sale of barbituric acid compounds, this turned out to be a revenue measure. Bill passed the House, was amended in the Senate and favorably reported. Amendment removed the words "for use by man or animal" from the provision that it would be unlawful to sell **any drug or medicine** containing any quantity of **barbituric acid** except on prescription. Registration provisions, fees for registration, etc., removed in the House, and the Committee Substitute, which passed the House was a bill to control the sale of barbituric acid preparations. Law.

H. B. 426, more drastic than H. B. 150. H. B. 426 provided for the levying of an annual license tax of \$10 for each county on each article (patent, proprietary medicines, home remedies) sold, peddled, delivered or distributed by any person, firm or corporation. (82 counties in Mississippi.) By the wording of one section, the State Board of Health might contend that each product containing an item listed in the U. S. Pharmacopoeia belongs to the patent or proprietary medicine or home remedy class; therefore, is subject to the tax. State Board of Health determining agent — no chance for appeal from its decision. Reported out of Committee "Do not pass" which is equivalent to an unfavorable report.

New Jersey—Senate 174, an amendment to the N. J. Weights and Measures Law. Would take away the enforcement of the Weights and Measures Act under the State Food and Drug Act, and transfer it to the Superintendent of Weights and Measures. Would not conform with laws in the States that are trying to follow the pattern of the Federal Food and Drug Act. It could be construed to place under the jurisdiction of the State Superintendent of Weights and Measures the examination of all articles sold in the State, to determine

the character of the packaging and prohibit the sale of deceptive ones. Containers or packages, no doubt, would be required to have contents plainly marked on the outside, meaning that the correct net weight or volume of any commodity, food, drug, cosmetic, insecticide, etc., must appear without regard to whether or not there is a Federal or State law that provides for the same thing. Net contents is not required under the Federal Insecticide Act. On May 23 we were advised that this bill was on the Senate calendar. This fall, strong pressure was brought to bear to have this bill revived and passed, but a hearing was held on Nov. 7 at Trenton that was attended by your president and representatives of a number of other associations. A revised bill, which removes most of the objectionable features of the original, is being offered in its stead. Your Committee appreciate the personal interest which Mr. Zick has taken in this matter of having this measure in proper form.

City of Newark (N. J.) Ordinance. Designed to control the sale of poisonous insecticides and disinfectants but, as drawn, would have included harmless products such as pyrethrum flowers and borax. We secured through Mr. H. C. Fuller the following statement from Dr. Craster in charge of the Department for the enforcement of this act:

"We feel that the public that buy those products and which so often store them in pantries and medicine cabinets, should be warned and protected by proper labeling of such commodities.

"The fact that hundreds of exterminators and insecticides are on the market makes it impossible to rule on each product at the moment, however, you may advise your clientele that Sections 1 and 2 of the Ordinance refer to definitely poisonous products." Ordinance enacted.

It has been the policy of this Association to discourage the enactment of local ordinances that are out of harmony with State and Federal law. This is a typical example of where the intent and purposes of the

*Report as Chairman of Legislative Committee before 27th annual meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., New York, Dec. 1940.

law are all right but where its wording could be misconstrued and misapplied.

New York—Assembly 64 (same as Senate 68). Intended to cover the retail sale of drugs, medicines and certain food products. It makes it unlawful for any person to sell at retail or furnish any of the poisons named in certain schedules without adding a proper label printed in red carrying the word "Poison," with the name of the article and the name and place of business of the seller. Assembly 64, died. Senate 68, law.

Assembly 183—to amend the Public Health Law in relation to controlling traffic in drugs, cosmetics, etc. Creates a Consumer Bureau in State Department of Health. Would require registration fee of \$5 for each proprietary product. Mr. MacNair advised that the NAIDM had filed an amendment at Albany to exempt products used in the industrial arts; those commonly used in the control of household, garden or crop insects, tree sprays, fungicides, fumigants, weed killers; materials used to control or eradicate vermin, rodents or other pests; stock dips or sprays designed for the purpose of controlling non-disease carrying insects; or disinfectants for use solely in the maintenance of cleanliness and sanitation in households, factories, institutions, farm buildings and elsewhere. Killed.

Assembly 1322. Would change the definition of insecticides and fungicides; prohibit the sale or advertising for sale unless the material was licensed by the Agriculture Commissioner—annual license fee, \$2; require that the principal uses of the material be shown on the label with the percentage of ingredients; prohibit adulteration and misbranding, and provide for the inspection and examination by the New York State Agricultural Experiment Station. Mr. MacNair succeeded in having this bill satisfactorily amended but it died. (Will undoubtedly be adopted in amended form this year.)

Rhode Island—H. B. 1033—followed the pattern of the Federal Food, Drug and Cosmetic Act but died.

Virginia—Senate 310. Revision of General Food Law. Provisions of the bill carry into effect references contained in the Model State Food Bill advocated by the Association of Dairy, Food and Drug Officials of the U. S. In a generally acceptable form became a law.

State Enforcement Activities

The 44th annual conference of the Assn. of Food and Drug Officials of the United States was held at New Orleans, recently. President Woodward and Dr. W. G. Campbell addressed the meeting. Mr. Woodward stated that some kind of registration or license feature should be incorporated in State Food and Drug Acts to

protect legitimate manufacturers and the public, and eliminate fly-by-night concerns.

Dr. Campbell spoke at length on Section 201 (n) of the new Federal Law providing, in part, that in determining whether a label is misleading there should be taken into account not only the representations thereon but likewise the extent to which the label fails to reveal certain material facts. Some of our members, doubtless, put out products that are intended for insecticidal purposes but which can also be used on dogs and other pets.

All State officials are seeking, unquestionably, larger appropriations for the maintenance of laboratories, employment of additional chemists, inspectors, etc. We may look forward to some drastic and misguided regulations by over-zealous officials; likewise, an increase in the number of registration and license fees, which all present a serious problem.

Trade Barriers

The following resolution was adopted at the annual meeting of the Board of Governors:

"BE IT RESOLVED THAT the membership of the National Association of Insecticide and Disinfectant Manufacturers, Inc., go on record as strongly opposed to all state, local and other fees required for the registration and licensing of products for sale within any state or municipality, and that

"The membership oppose to the best of its ability the introduction or adoption of any and all such registration fees which it considers excessive and accordingly a hardship on manufacturers doing a national business."

The Legislative Committee endorses this resolution and calls the attention of the membership to the importance of lending their influence in their respective States in opposition to this trend. The following information recently received by your Chairman should be considered by every member:

"Recently there was formed an Inter-Departmental Committee on Interstate Trade Barriers, under the auspices of the Department of Commerce. A study of the subject has begun and there has been evidence presented to the Temporary National Economic Committee. A preliminary investigation by the United States Marketing Laws survey discloses that there are 1,489 State barriers on our statute books and that there are thousands of laws still to be examined and analyzed. Statutes of this nature can be changed or repealed only by statute, which means that the various industries affected must cooperate

to bring about repeal of the State measures that affect them."

One of the most striking illustrations of a typical trade barrier is the Florida license fee of \$125, with an additional \$2.50 registration fee for each brand. Your Chairman has consulted competent counsel in regard to this situation, and have been informed that the only available remedy against these fees is to get action at the next session of the legislature. Much work would have to be done in advance of such action. Our members would have to make such strong protest to the Commissioner of Agriculture that he would deem it advisable to make such recommendation to the law-makers of that State. Your Committee intends to work toward this objective as vigorously as possible.

The fact that Louisiana recently reduced its registration fee under the Food and Drugs Act from \$100 to \$50—at the urgent request of the Manufacturers Committee of the Association of Commerce, backed up by the various trade groups throughout the country and by the Governor of Louisiana—shows that relief could be gotten in Florida if we could prove that the money collected is in excess of the actual cost of operating this particular department.

J. W. Young, Director of the Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce, announced on August 11, the inauguration of an educational and promotional program for the removal of interstate trade barriers. Mr. Young notified managers of 31 field offices in principal commercial centers of this program and has extended invitations to local business men and business groups affected by trade barrier practices. Mr. Young urges all business men so affected to bring their problems to the Bureau of Foreign and Domestic Commerce so that progress can be made "toward removal of all laws, rules, regulations and administrative orders which impede or tend to impede the free flow of commerce between states."

Your Chairman sent considerable material on the subject of trade barriers to the American Bar Association, and this problem is now being considered by their Committee on Commerce. We quote from the Committee's printed report:

"Your Committee has collaborated with the Department of Commerce in turning over such information as we have relating to this problem for the Department's use. The Council of State Governments, as well as other organizations, has been very active in attacking this problem. It is believed that as a result of the attention this subject has lately received from the several interested groups, there will be established some kind of a joint federal and state committee, the main

(Turn to Page 117)

RAT LURES

By J. A. Lubitz, C. R. Fellers and A. S. Levine

Massachusetts Agricultural Experiment Station, Amherst

NUMEROUS claims are often made for rat lures. This work was undertaken to determine the effectiveness of various substances as rat lures.

For many years, according to Hovell¹, it has been customary to add essential oils to baits for rats with the object of making the baits more attractive. However, recent experiments seem to show that baits which have not been flavored are taken more readily than those which have been so treated.

O'Connor, Buck, and Fellers² report that the use in foods of oils of caraway, anise, catnip, cinnamon, and peppermint did not enhance palatability of the food to rats. Also that oil of peppermint is repellent to rats.

Mills³, using oils of anise, caraway, and rhodium, states that these substances acted more as repellents than as lures. He says that lures or essential oils do not seem to have any great value in increasing the acceptability of baits.

Richter, Holt, and Barelare⁴ found that the odor as well as the taste of thiamin were both attractive to thiamin deficient rats and that their craving for the vitamin was easily apparent.

Experimental

Materials used:—Mono-sodium glutamate was used in this study because of its meat-like flavor. The imitation oil of rhodium; imitation extract of cheese; and oils of anise, caraway, cinnamon, and peppermint were used as they are employed commercially to some extent in prepared rat and pest baits. Brewer's yeast powder; two by-products of manufacture of thiamin from rice hulls, and thiamin chloride were used as bait materials because of their vitamin B₁

content. One of the two by-products was a dark viscous mixture which will hereafter be known as by-product A, the other was an ill-smelling, amber colored solution containing a volatile solvent which will be called by-product B. The carriers used were a commercially prepared dry food called Purina Fox Chow; dried bread crumbs; rolled oats and water; and a mixture of rolled oats, water, and red squill powder. The rolled oats and water both with and without red squill were blended by heat to make an "oatmeal." The rats were normal adult albinos weighing from 150 to 400 gm. and taken from the Massachusetts State College colony.

Procedure

Various percentages of flavoring material and enough carrier of Fox Chow, dried bread crumbs, or rolled oats and water were made up into baits. The carriers without added lure were used as the controls. Twenty gm. of each bait and 20 gm. of the control were weighed into individual feed cups and placed in each cage. One well-fed rat was placed in each cage. These baits were exposed to the animals for 24 hours, then collected and weighed.

Results

Preliminary experiments showed that the attractiveness of Fox Chow to rats was not enhanced by the addition of .1 per cent of mono-sodium glutamate, oil of rhodium imitation, and extract of cheese imitation. More extensive investigations of these rat lures were conducted.

Five rats were given their choice of plain Fox Chow, Fox Chow and .5 per cent mono-sodium glutamate, and Fox Chow and 2 per cent mono-sodium glutamate. Three rats

preferred the plain bait, one the .5 per cent and one the 2 per cent mono-sodium glutamate bait. When dried bread crumbs were substituted for the Fox Chow and offered to five rats, again three preferred the control baits to those containing mono-sodium glutamate.

Five rats were fed Fox Chow and .1 per cent oil of rhodium imitation in Fox Chow. Four rats preferred the plain Fox Chow control. In like manner dried bread crumbs, with and without .1 per cent oil of rhodium, were fed to four rats. All of these preferred the control of dried bread crumbs.

When five rats were fed Fox Chow and Fox Chow containing .1 per cent and .5 per cent extract of cheese imitation, three rats preferred the .1 and two the .5 per cent baits. Five rats were also fed dried bread crumbs with and without .1 per cent of extract of cheese imitation. All five rats preferred the control bait. When 20 rats were fed Fox Chow and .5 per cent extract of cheese in Fox Chow, the preference was equally divided. Five rats were fed .5 per cent of extract of cheese with dried bread crumbs as the control. Four rats preferred the control bait.

To determine whether or not thiamin containing substances have any value as lures for healthy rats, five rats were offered their choice of the following baits: 10 per cent brewer's yeast powder, 90 per cent Fox Chow; 10 per cent of by-product A, 90 per cent Fox Chow; 10 per cent by-product B, 90 per cent Fox Chow; .5 per cent thiamin chloride, 99.5 per cent Fox Chow; and plain Fox Chow as control. One rat preferred the dried brewer's yeast bait, two the by-

(Turn to Page 103)



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What of RAW MATERIALS?

By C. C. Concannon*

Chief, Chemical Division, Dept. of Commerce

ONE year ago, you may recall, was the sitzkrieg stage of Europe's present war. Later, we followed the important changes wrought by blitzkrieg, while in our own country, the needs of materials for national and hemisphere defense have occupied a foremost place in the minds of many identified with our chemical industry. Before sketching briefly the current position with respect to some of the commodities used in the manufacture of sanitation products, I can state that it is my candid opinion that no critical situations are in the offing with regard to the supply of major raw materials used in production of your chemical specialties.

Pyrethrum: Trade journals would indicate that the current market prices for pyrethrum flowers are one-third below those of a year ago. The outstanding feature of the United States pyrethrum import trade of 1940 was the predominance of imports from Kenya. Heretofore, Japan has been the major supplier but during the first 10 months of 1940, Kenya accounted for 80 per cent of the 11,000,000 pounds entered. Substantially all of the remainder came from Japan.

One of the reasons for the decreased importations from Japan is the rise in home consumption both for military purposes and in the household. In recent years smudge sticks or coils made from pyrethrum are extensively used in the homes of the poorer classes. The acreage devoted to pyrethrum has apparently declined because of the tendency to convert pyrethrum fields to rice fields.

Yugoslavia, a former important source, contributed only 1 per cent, while minor supplies were received from Brazil, Belgian Congo and Peru. Efforts to increase pyrethrum cultivation continue throughout the world, but in the United States, the only commercial plantings are on a modest scale in Pennsylvania and California.

Rotenone: A record was established during 1939 in imports of rotenone-bearing roots. We shall witness a further gain for 1940, in fact, preliminary data for 10 months disclose receipts in excess of those reported for the full year 1939. In the intercommodity competition between Asiatic derris and South American cube and timbo, derris imports had the highest valuation, however, the physical volume constituted approximately 2,700,000 pounds for each group.

Derris receipts for the first 10 months of 1940 originated in five countries led by British Malaya with 1,700,000 pounds, Netherlands Indies 800,000, French Indo-China and the Philippine Islands each somewhat over 100,000 pounds. Of the South American rotenone-bearing roots, Peru became the chief supplier in 1939 when the imports exceeded those originating in Brazil. The 1940 (10-month) receipts from Peru approximated 1,800,000 pounds. Brazil supplied 300,000 pounds of unground root and 600,000 pounds of ground, the latter being subject to import duty.

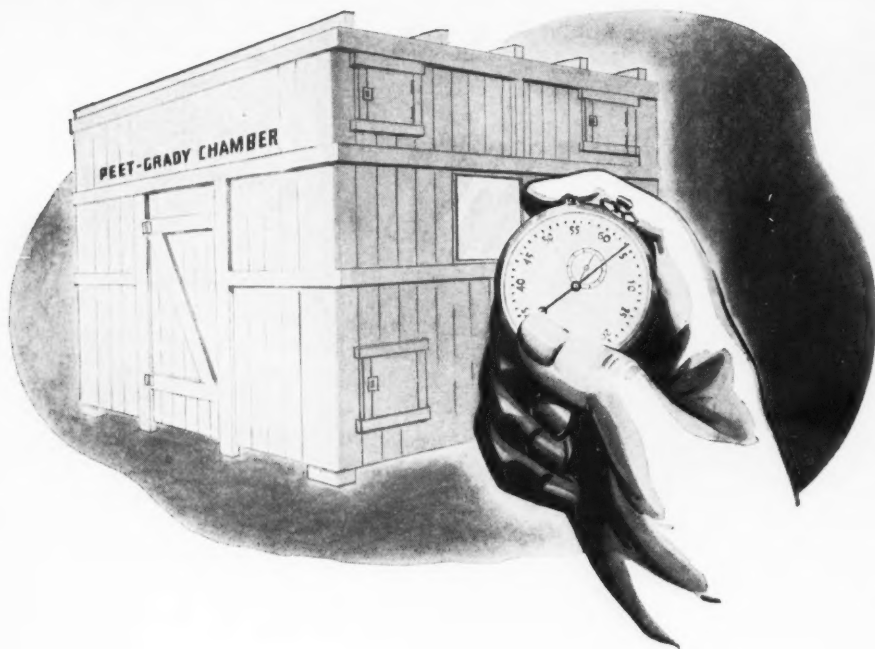
For several years the State of Para has prohibited exports of timbo except in a ground form, the objec-

tive being to eliminate the possibility of releasing stock for propagation. A recent report indicates that henceforth all timbo root exported from Brazil must be in the form of powder or an extract thereof. If this is correct shipments of unground material from Manaos in the State of Amazonas will cease. The sole other supplier was Venezuela which contributed 75,000 pounds.

Red Squill: Before ending the discussion on botanicals used in pest control, mention should be made of red squill, an item that never assumed much importance from a dollar standpoint in our import trade, but which is considered by many as the ideal base for the preparation of rodenticides. The closing of the Mediterranean Sea to normal commerce has made it difficult to place forward import commitments for supplies of red squill. This situation has resulted in increased cost for spot supplies, although the situation is said to be not critical at the moment. If the war should continue it may become necessary for some firms engaged in the manufacture of rodenticides to resort to use of chemical poisons in place of red squill.

Fats and Oils: The present European war has caused a number of major changes in the supply, in international trade, and in the use of fats and oils. These changes have not been confined to the warring nations alone, but have been felt even in those countries which have been at peace with the world. And the United States has been no exception. Because the British blockade has closed the principal European markets for tropical

* Address before the 27th annual meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., New York, Dec., 1940.



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February, 1941

cocoanut and palm oils the pressure of supplies has depressed prices in primary producing countries to unremunerative levels. On the other hand, the Mediterranean situation has resulted in higher prices for olive oil. Despite the war in China, tung oil is selling today at substantially the same price as a year ago and our 1940 imports of 95,000,000 pounds in a ten-month period exceed those of corresponding months of 1939. [Tung oil is today the chief item, from a dollar standpoint, in our entire import trade in chemicals and related materials.]

While supplies of Asiatic perilla oil tend to decrease, it is gratifying to report that Brazilian oiticica is available in larger supply. Although our increasing domestic flax seed crop is still inadequate to supply the needs of the paint industry for linseed oil, flax seed quotations today are under those of a year ago. (Ed. Note: As of December, 1940.)

Alkalis: The American producers of primary potash are doing a splendid job of satisfying the needs of the farmers and industry, notwithstanding the fact that imports from Europe are now limited to relatively small quantities from Spain.

However, the close balance between estimated consumption and supply will be upset if exports of high-grade muriate should continue at the levels established in the last four months, when shipments described as "potash fertilizer materials" reached 65,786 short tons, eleven times those of the first half of 1940.

The availability of domestic high-grade muriate has been the base of our constantly expanding potash chemical industry, potassium cyanide being one of the new items added in 1940 to the range of domestic potash salts. The domestic production for sale of caustic potash in 1939 of 14,000 short tons with a value at the factory of \$1,800,000, was three times the 1931 accomplishment when our consumption was met one-half by domestic producers and one-half by foreign producers. At present our imports are insignificant. About one-third of the potassium hydroxide sold in this country enters into the manu-

facture of potash soaps. Potassium carbonate of domestic origin is also in abundant supply. In the field of soda alkalis United States has been on an export basis since the World War.

Carnauba Wax: In normal times the United States consumes from 60-70 per cent of the exports of carnauba wax from Brazil, the sole source of supply. Production averages between 11,000 and 12,000 short tons annually and exports in 1939, an all time record, were 8,200 tons. Our receipts for the first 10 months of 1940 totaled 6,900 tons. Although these figures would tend to indicate no shortage, nevertheless, the price today is approximately 50 per cent over that of a year ago. Higher freight and insurance rates are factors in the increased prices.

Time does not permit me to discuss even in a brief manner any additional commodities, but I hope that if any one present is interested in having commercial information on any chemical or allied product, he will call upon the Bureau and Domestic Commerce for aid.

Rat Lures

(From Page 99)

product B, and one the control bait.

Oils of anise, caraway, cinnamon, and peppermint were added to rolled oats and water which had been blended by heat. The baits consisted of 20 per cent rolled oats; .1, .2, .3, and .4 per cent of each of the volatile oils and sufficient water to make 100 per cent. The control consisted of 20 per cent rolled oats and 80 per cent water. The rats consumed greater quantities of the control food than of the baits to which oils of anise, caraway, cinnamon, and peppermint had been added.

Baits consisting of 20 per cent rolled oats, 4 per cent red squill powder, .4 per cent of the various volatile oils, and sufficient water to make 100 per cent were also prepared. Twenty per cent rolled oats, 4 per cent red squill powder, and 76 per cent water constituted the control bait. Again the control bait was consumed in greater quantity than the

other baits to which the volatile oils had been added.

Recommendation

There are in use at the present time many pest lures whose efficiency is questionable. It would seem from the results of this investigation that the value of some lures lies chiefly in the psychological appeal that their odors have to the customer rather than any supposed worth as pest attractants. It is recommended that so-called lures used in commercial practice be investigated in a practical way before use to determine whether or not they possess actual merit.

Summary

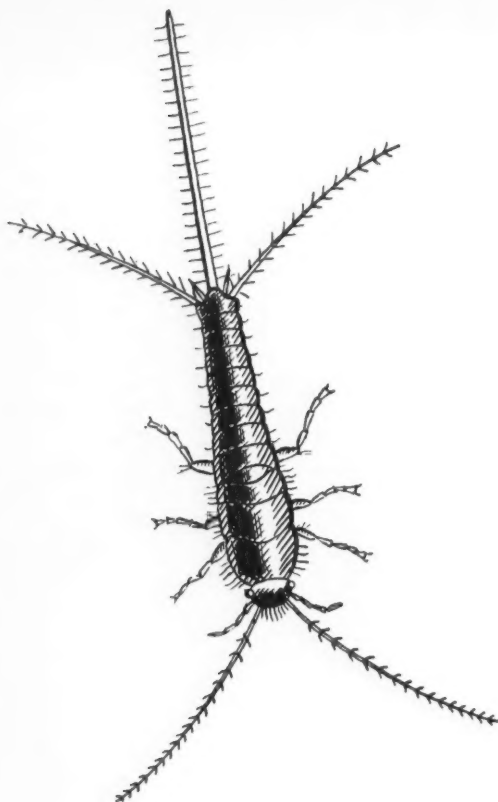
Mono-sodium glutamate; oil of rhodium imitation; extract of cheese imitation; oils of anise, caraway, cinnamon, and peppermint; brewer's yeast powder; two by-products of the manufacture of thiamin from rice hulls; and thiamin chloride were tested in rat baits as lures. These were found to possess no merit as attractants to albino rats.

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- ² O'Connor, M. G., Buck, R. E., and Fellers, C. R., *Ind. Eng. Chem.*, 27 (1935), 1377.
- ³ Mills, E. M., Master's Thesis. Massachusetts State College, (1938), 43 pp.
- ⁴ Richter, C. P., Holt, L. E., Jr., and Barelare, B., Jr., *Science*, 86 (1937), 354.

Cryolite In Scale Spray

The addition of cryolite to oil spray for summer scale spraying has been used by many orange growers as an insurance against orange worm (tortix) damage, according to Dr. A. M. Boyce of the California Citrus Experiment Station who developed the use of cryolite in this manner. The cryolite is added at the rate of one pound to the 100 gallons of diluted spray and increases the cost about two or three cents a tree. In the summer oil spray, it is said to give protection against tortix worm damage during the fall and early winter months.



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LABELING—and the Law

What the insecticide and disinfectant manufacturer must think about under the Wheeler-Lea and Food and Drug Acts

By H. C. Fuller*

WHILE we have spent much time at meetings during the past two years, discussing questions of labeling, it is believed that there are one or two regulatory measures bearing on labeling and advertising which should be discussed at this time.

Wheeler-Lea Act: The increasing activity of the Federal Trade Commission, operating under this law which strengthens the control of labeling and advertising of all products, should be brought to the attention of this industry. No doubt, all are readers of the trade journals, in which, from time to time, appear reports of regulatory actions instituted by the Commission against products which are falsely and deceptively labeled. The law gives the Commission wide scope. It can take action against the labeling on packages; circulars included in the packages, or distributed by hand or through the mail; all catalogues distributed to the trade; and advertising appearing in the public press, magazines, radio, or otherwise.

The important point to be stressed is that catalogues and advertising material should always carry as much information as appears on the label of the package, and be particularly informative regarding cautions and limitations of use. For example, if an insecticide or fungicide carries directions that limit the use of the product, and such limitations may be due to the presence of strong chemicals, or for some other reason

that would make its application undesirable or dangerous for indiscriminate use, such information must appear in a catalogue featuring the product, and, also must be stressed in radio and other advertising. If state or federal acts require warnings because of the presence of potent drugs or chemicals, the catalogue and advertising should be fully as informative.

This situation is very important and has been gaining momentum during the past year. It has become more or less acute since the last meeting, and its significance should be appreciated by those members who issue catalogues, or whose advertising is of a national character.

Testing of New Products:

From time to time new chemicals are developed and offered to the trade as insecticides, fungicides, and disinfectants. Experimental work on their effectiveness as killing agents has usually been quite thorough, and often they add considerably to the value of insecticidal sprays, powders, etc. already on the market. Moreover, because of their effectiveness, they may loom as formidable rivals and substitutes for substances that have been in common use over long periods.

Due consideration to the effect of these new chemicals either by themselves or in admixture, on public health is a matter which should be given careful consideration before anybody should adopt them for general distribution.

From time to time, the National Institute of Health devotes it-

self to a study of the physiological action of such articles, particularly when it appears that there may be some hazard to their use. It, therefore, behooves any manufacturer who proposes to adopt a new chemical for insecticidal purposes, to ascertain through his own independent researches, just how far he is warranted in adopting it, and no matter how exhaustive the producer's tests may appear, he should protect his interests by having independent investigations performed by qualified experts in the clinical and pathological fields. As a matter of fact, the N.A.I.D.M. as a sponsor, might well undertake broad studies of products which might be offered as desirable insecticides or disinfectants for general usage.

Labeling Requirements:

Many individual firms that are members of the N.A.I.D.M., distribute general lines of pharmaceutical products, and while, no doubt, they receive first-hand information on the trend of activities conducted by the Federal Security Agency administering the Food, Drug and Cosmetic Law, there may be an angle to the situation which is not thoroughly understood, or which may not have been sufficiently stressed. I refer to that section of the law which requires quantitative disclosures of several drugs and chemical substances which have not, heretofore, under the old Act, been featured on the label. In the early days of the old Act it was demonstrated that the declaration of quantitative content of drugs even in simple tablet and liquid mixtures, was often as much as 50 per cent

* Report before the 27th annual meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., New York, Dec., 1940. Mr. Fuller is technical consultant for the N.A.I.D.M. in Washington, D. C.

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at variance with the actual content. This situation was discovered when checks were made on tablets sold by physicians' supply houses and so labeled that the purchaser might know the content of drug supposed to be present. Great confusion resulted and lasted for several years until the trade realized the necessity of improving not only its manufacturing processes, but its ability to check finished goods in order to determine compliance with labeling.

Under the new law, many drugs must be featured quantitatively no matter what type of preparation they occur in, and experience has shown that even under the most careful conditions of manufacture, there is considerable difficulty in producing a combination that will be true to specifications.

I understand that the activities of the Administration are being directed to check the ingredient statements of products that are subject to the Act, and it is not unlikely that the trade will be surprised to find that 50 per cent or more, of goods that are labeled to conform to certain specifications, will be found substandard. This statement does not mean that possibly 50 per cent of the drug products subject to the new law are misbranded; it refers only to those which are intended for popular distribution, and the labels of which, require certain disclosures as to the quantity per unit of certain drugs and chemicals present.

North Dakota Laws: Considerable interest has developed in recent months over the apparent conflict of certain state acts with the Federal Insecticide and Food and Drug laws. North Dakota has an insecticide law similar to the Federal Act and, in addition, a so-called Livestock Medicine Act which includes in its scope of application, certain types of insecticides and disinfectants. Under the latter, there are provisions which require a quantitative disclosure of the active and inert ingredients, so that in the final analysis, it is practically necessary

to declare on the label, the percentage amounts of all the components.

In attempting to work out labels which would conform to Federal laws and also be legal in North Dakota, I endeavored to ascertain, in as authoritative a manner as possible, just what the various state acts cover. It appears that insecticides such as fly powders, roach powders, and liquid fly sprays intended for household use, are subject only to the State Insecticide and Fungicide law, the provisions of which, are practically identical with those of the Federal Act. Disinfectants for use solely on inanimate things such as stalls, pens, cattle cars and the like, are also subject to the Insecticide and Fungicide law, and if they are recommended only for washing wounds and sores, they are subject only to that law and do not come within the provisions of the Livestock Medicine Law. Of course, sprays for trees and garden use are not subject to the latter, either.

The Livestock Medicine Act does apply to dips and sprays used on cattle, sheep, and swine for the removal of ticks and lice, and the flea powders that are used for dogs and cats. At the present time, however, the ruling of the law does not apply to canaries and other caged birds, but there is no assurance that this will continue because the question has not been definitely settled.

New Jersey Senate Bill 174: Attention should be directed especially to Section 3, paragraph (b) which forbids the selling, distribution, or intent to sell or distribute any commodity if the container is formed, constructed, or made as to be deceptive or misleading. There is a similar provision in the Federal law which has been the cause of considerable grief to manufacturers that are subject to the Act, and it would be well for the members of the Association, especially those who put out goods in small packages, such as household insecticides, to examine their con-

tainers, particularly in relation to the fill, and if the container is enclosed in a carton, to be sure that there are no waste spaces that would render the package, as a whole, deceptive to the purchaser.

While at the present moment, the difficulty concerns goods sold only in New Jersey, and there is no Federal provision applicable to insecticides or disinfectants unless they can be classed as drugs because of their labeling, the precedent that will be established in New Jersey will, no doubt, be duplicated in other states and manufacturers might as well be prepared for the inevitable.

Reports on the bearing of the new Food, Drug and Cosmetic Act on the labeling of insecticides and disinfectants, and particularly those which may be designed or recommended to destroy low forms of animal life and bacteria which directly cause disease, have been featured before the N.A.I.D.M. on several occasions during the past two years. Hence, I shall not devote my time to a discussion of the regulatory measures. If anyone has a specific question on any phase of the law of which an understanding is not clear, I shall be very glad to answer it during the interim following the general meeting.

The labeling of pyrethrum has also been discussed at length and has been made the subject of a special inquiry by a Committee of the N.A.I.D.M.

In conclusion, there are three important things for the insecticide and disinfectant manufacturer to consider during the coming year: first, the bearing of the Wheeler-Lea Act on your advertising; second, labeling requirements under the Food, Drug and Cosmetic Act, particularly the phase which has to do with the quantitative disclosure of certain active ingredients; and three, the consideration that should be given the new products which may from time to time be offered as insecticides, disinfectants, and fungicides, and particularly, their bearing on the public health.

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New Specifications for FLOOR PRODUCTS

SOAPS — WAXES

SEALS — FINISHES

WORK on the drafting of proposed new federal specifications for materials used in the maintenance of floors in public buildings has recently culminated in the release of a set of modified specifications to the trade for comment and criticism. The new specifications have been prepared under the direction of a new Technical Committee on Floor Treatments appointed early last summer by the Federal Specifications Executive Committee. The chairman of this technical committee is C. W. Chamberlain, Public Buildings Administration, Federal Works Agency, Room 624, Procurement Division Building, Washington, D. C.

The new specifications include proposed revisions of present Federal specifications for soft soap (P-S-612), potash linseed soap (P-S-613), water emulsion floor wax (P-W-151), liquid and paste floor wax (P-W-141), paste wood filler (TT-F-336), varnish type sealer (TT-S-176), as well as a completely new specification for lacquer type sealer for wood floors. Comments on the new proposals will be welcomed by the committee, and any criticisms or suggestions for change should be forwarded to the chairman. For consideration they must be received before March 1.

The most important change in the present official specifications covering potash soaps (P-S-612 and P-S-613) is the proposal to provide for two classes,—a liquid soap in addition to the paste soap now provided for. The most significant change in the detail requirements for the paste type is a wider free acid tolerance, with a maximum of 0.2 per cent allowable in the new spe-

cification as compared with 0.1 per cent in the present (P-S-612).

A complete new set of requirements are set up for the liquid type,

which is to be 20 per cent anhydrous soap as compared with 43 per cent for the paste variety. These are indicated in the accompanying table.

Proposed Revision of P-S-612

	Type I		Type II	
	Min.	Max.	Min.	Max.
Moisture (toluol distillation method), %....	—	—	—	55
Total matter insoluble in alcohol, %.....	—	0.5	—	1.0
Free alkali, calculated as potassium hydroxide (KOH), %.....	—	0.05	—	0.05
Free acid, calculated as oleic acid, %.....	—	0.1	—	0.2
Alkaline salts, calculated as potassium carbonate (K_2CO_3), %.....	—	0.1	—	0.2
Matter insoluble in distilled water, %.....	—	0.1	—	0.2
Chloride, calculated as potassium chloride (KCL), %.....	—	0.1	—	0.5
Unsaponified and unsaponifiable matter, %..	—	0.4	—	0.8
Anhydrous soap, calculated as potash soap, %.	20	—	43	—
Total sodium compounds, calculated as NaO, %	—	0.2	—	0.5
Glycerol, %	1.8	—	4	—
Iodine number (WIJS) of mixed fatty acids derived from the soap.....	100	150	100	150
Acid number of mixed fatty acids derived from the soap	195	205	195	205
Rosin	—	None	—	None
Sugar	—	None	—	None

Several important changes are suggested in the new draft for the paste soap covered by P-S-613, as well as the provision for a liquid type with a completely new set of detail requirements. Where no free acid is allowed in the present requirements for P-S-613, the new specification would allow a maximum of 0.2 per cent for the paste type. Maximum chloride as KCl would be reduced from 0.5 per cent to 0.2 per cent, and unsaponified and unsaponifiable matter from 2 per cent to 1 per cent. Alkaline salts would be limited to a maximum of 0.2 per cent, where the present P-S-613 makes no mention of this requirement.

The complete set of detail requirements for both the liquid and paste types are included in the table on the following page.

There are only a very limited number of changes in the proposed modifications of the floor wax specifications. In P-W-151 for water emulsion floor wax the only suggested change seems to be a reduction in maximum allowable water solubility from 15 per cent to 10 per cent. In P-W-141 the only significant change suggested seems to be an increased tolerance in allowable drying time. It is proposed that 45 minutes be allowed in which the wax must dry to a semi-transparent non-tacky film, which shall show no signs of whiteness. The present official specification allows only 20 minutes in which this condition must be satisfied.

In the new specification for paste wood filler—to replace the existing TT-F-336—an additional drying provision has been provided.

CRESYLIC ACID — FORMALDEHYDE

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Acetophenone
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The material must set to touch within three hours, a requirement not mentioned in the present standard. Changes in consistency requirements are also recommended. In the new specification minimum pigment content is set at 78 per cent, comparing with 70 per cent in the present specification. A maximum pigment content of 85 per cent is fixed. A minimum vehicle content of 15 per cent and a maximum of 22 per cent is suggested, as compared to the present maximum limit of 30 per cent. Maximum water and coarse particle tolerances remain at 0.5 per cent. There is an additional requirement in the new specification that total volatile matter at 105° to 110° C. shall not exceed 5 per cent. Further changes are suggested in the nature of the pigment content. The present official specification admits the presence of magnesium silicate and calcium sulfate in the silica which is to form the bulk of the pigment content. In the new specification it is provided that no other pigments shall be present in the natural filler but sharp crystalline particles of silica. Insoluble mineral matter is fixed at a minimum of 95 per cent as against 85 per cent in the present specification.

In the proposed new specification for varnish type sealer—to replace the present federal specification (TT-S-176)—two classes of products are provided for as against one in the present specification. Provision is

made for a product with a minimum volatile content of 20 per cent, in addition to the 40 per cent minimum type product provided for in the

THE new specifications here discussed are merely proposals and as yet have no official standing. They are subject to revision, and comments and criticism will be welcomed. For abbreviated text of general and detail requirements of present official specifications see your 1940 BLUE BOOK, pages 161-177.

existing specification. There are also several changes in the detail requirements which apply to the 40 per cent as well as the 20 per cent sealer. Products of both classes, for instance, must dry hard and tough in a maximum of 7 hours, where 18 hours are allowed in the present official specification. There is another change in the provision that both products must pass a 100 per cent kauri reduction test (for toughness) at 25 C. The present provision is for a 50 per cent kauri reduction test. Viscosity of the 20 per cent product is set at 0.220 poises in the proposed new specification. In all other respects previous detail requirements seem to be unchanged.

A completely new specification is set up for lacquer type sealer

for use on wood floors. General requirements closely follow those laid down for the varnish type sealer. Detail requirements are suggested as follows:

The floor sealer shall be a clean liquid free from sediment or suspended matter and shall be of such fluidity that no further thinning will be required. The floor sealer shall meet the following requirements.

Color—not darker than a solution of 3 g of potassium dichromate in 100 ml of sulfuric acid, specific gravity 1.84.

Non-volatile matter—not less than 14 per cent.

Set-to-touch—in not more than 10 minutes.

Dry hard and tough—in not more than 3 hours.

Nitrocellulose—not less than 3 per cent by weight of the sample.

Solubility of non-volatile matter—shall be insoluble in benzol but shall be almost completely soluble in ethyl alcohol.

Toughness—air dried film on metal shall withstand rapid bending over a rod 3 mm (1/8-inch) in diameter.

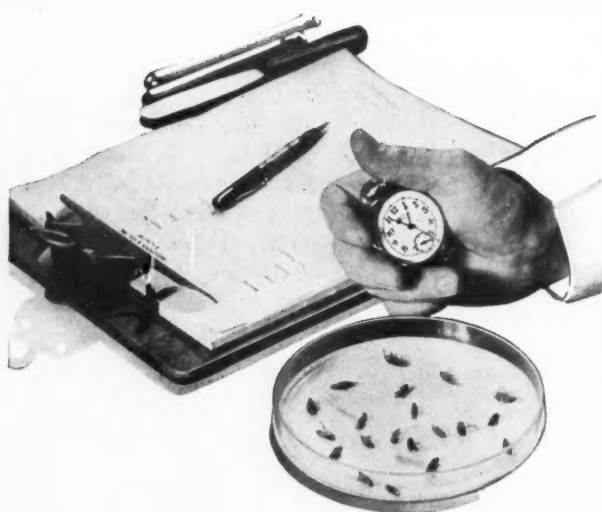
Viscosity — not more than 0.220 poise.

Air Sterilization

Air sterilization is of particular interest in England under the crowded conditions of use of air-raid shelters. One method is irradiation with ultraviolet light, a proved means of aerial disinfection. Another is ultra atomization of disinfectants or dispersion of liquid particles in air. The latter is more effective than volatilization of a liquid. Bechhold showed that certain derivatives of hydroxy-carboxylic acids of a cyclic character are effective in the proportion of 1 part in 50 million parts of air. Recently the subject has been extensively investigated both as regards the chemical nature of the disinfectant and the physical nature of its aerosol, which have to be correlated with bactericidal efficiency and nontoxicity. W. H. Stevens. *Manufacturing Chemist* 11, 232-4 (1940).

Proposed Revision of P-S-613

	Type I		Type II	
	Min.	Max.	Min.	Max.
Moisture (toluol distillation method), %....	—	—	—	55
Total matter insoluble in alcohol, %.....	—	0.5	—	1.0
Free alkali, calculated as potassium hydroxide (KOH), %.....	—	0.05	—	0.1
Free acid, calculated as oleic acid, %.....	—	0.1	—	0.2
Alkaline salts, calculated as potassium carbonate (K ₂ CO ₃), %.....	—	0.1	—	0.2
Matter insoluble in distilled water, %.....	—	0.1	—	0.2
Chloride, calculated as potassium chloride (KCl), %.....	—	0.1	—	0.2
Unsaponified and unsaponifiable matter, %..	—	0.4	—	1.0
Anhydrous soap, calculated as potash soap, %.	20	—	43	—
Total sodium compounds, calculated as Na ₂ O, %.....	—	0.2	—	0.5
Glycerol, %.....	1.8	—	4	—
Iodine number (WIJS) of mixed fatty acids derived from the soap.....	175	—	175	—
Acid number of mixed fatty acids derived from the soap.....	190	205	190	205
Rosin.....	—	None	—	None
Sugar.....	—	None	—	None



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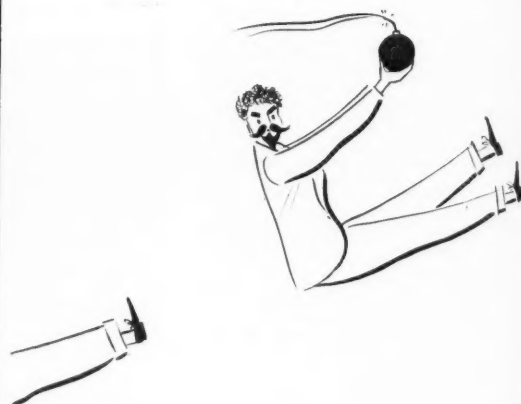
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Disinfectants for Dairies

Numerous widely used detergents and disinfectants were tested for their germicidal action on *B. abortus* Bang, and on *B. tuberculosis*, by the suspension technique, at 20°, 40°, and 60° C. Three concentrations of the disinfectants were studied. Some experiments were made on organisms suspended in a 2 per cent milk solution, and some on equipment designed for the cleansing and sterilization of cans. Preparations high in active chlorine were very effective in concentrations of 0.5-1.0 per cent at 40°. For general disinfection soda lye solution of pH 11.5 was ineffective. Disinfectants containing chlorine were more effective than those containing alkali only. In can-washing machines, disinfectants low in active chlorine did not kill *B. tuberculosis* at pH 11.5 and 60° C. Detergents and disinfectants used in dairying should be standardized on the basis of chlorine content and of alkalinity. H. Nottbohm. *Molkerei-Ztg.* 54, 173-4, 197-8 (1940); through *Chem. Abs.*

Anti-moth Storage

Within the last few years many laundry and dry-cleaning plants have established their own storage vaults. To provide complete service it may have been necessary to add fur cleaning and possibly a fur-repair department. Storage fits well with servicing, as for storage of wool garments, blankets, quilts and rugs. Nearly every plant that has built its own storage vault has found the storage business somewhat more lucrative than dry cleaning. One trade paper reports a survey showing a storage business profit 8-10 times that of dry cleaning.

Two types of fumigants have been employed, cold storage being a separate method of preservation. A liquid fumigant which evaporates and fills the chamber with gas is a 50:50 mixture of carbon tetrachloride and ethylene dichloride to give a concentration of 20-25 pounds per 1000 cubic feet at 65° F. or more. A suitable gas is a mixture of carbon dioxide and methyl formate, sold in regular pressure cylinders. The cyl-

inder is usually kept on scales so that the amount used can be recorded. W. L. Nelson. *Laundry and Dry Cleaning J. of Canada* 20, No. 12, 14-16 (1940).

Comparison of Derris

In evaluating the relative toxicities of different species of Derris, practical tests using the bean aphid (*Aphis rumicis*) were made. Applied as contact sprays, *Derris malaccensis* (Kinta root), *D. malaccensis* (Sarawakensis root), *D. elliptica* (Sarawak creeping root), and *D. elliptica* (Changi root) showed the following relative effectiveness: 1:1.76:1.31:2.66. The rotation values obtained in the laboratory on the same roots showed quite different ratios, proving that rotational methods are not satisfactory for the assessment of the insecticidal activity of derris root or derris resin. The method of Jones and Smith used on houseflies does not hold for the evaluation of the toxicities of extreme types of derris for aphids. The caustic potash fraction of the ether solution of derris resins affords a rapid qualitative test for distinguishing between roots of *D. elliptica* and *D. malaccensis*. J. T. Martin. *Ann. Applied Biol.* 27, 274-94 (1940); through *Chem. Abs.*

Pyrethrum Extract

Pyrethrum is extracted with an organic solvent, concentrated by evaporation of the solvent, calcined magnesium oxide is added and the mixture evaporated to dryness. The residue is extracted with a solvent difficultly soluble in water, such as fusel oil or camphor oil. Saponin is added. H. Toda. Japanese Patent No. 129,061.

Insecticidal Mixture

A crude pyrethrum powder is extracted with acetone. The acetone extract containing a small amount of moisture is treated with gasoline or kerosene to extract the active principle. The upper layer is mixed with creosote or camphor oil, *para*-dichlorobenzene, and the seed oil of *Zanthoxylum piperitum*. H. Akita. Japanese Patent No. 129,259.

Mothproofing Textiles

Foremost among mothproofing chemicals applied to wool is pentachloro-dioxy-triphenylmethane sulfonic acid, which may be described as a colorless acid dye from its method of application. The use of 1½ per cent of this in the dyebath, calculated on the weight of material to be treated, protects against clothes moths, or 2 per cent protects also against the carpet beetle. The applied compound is fast to scouring, washing, light, and dry cleaning.

A moth-proofing agent applied from neutral solution is a chlorinated phenyl benzyl phosphonium compound, which has about the same properties as the agent described above.

All agents based on silico fluorides have one underlying fault, a complete lack of fastness to water and washing. Henry F. Herrmann. *Am. Dyestuff Reporter* 29, 539-40 (1940).

Mold Prevention in Paint

Mold damage to paintwork is usually serious only in buildings where a high atmospheric humidity is continuously maintained, as in laundries, indoor swimming-baths, etc. White lead has only a slight deterrent effect on the growth of fungi. Zinc, in soluble form, is poisonous to molds or fungi. A number of fungicidal proprietary paints are more or less effective. The toxic constituent in most of these is a mercury salt, which however, is not recommended for use in food factories and breweries.

Five per cent concentrations of zinc fluoride, zinc silicofluoride, zinc borate and zinc benzoate rendered paint highly resistant to mold attack. *Para*-chloro-*meta*-cresol was not effective at a concentration of 0.4 per cent under the conditions of the test. One per cent of benzol cresol was only moderately effective. Calomel or mercurous chloride is highly effective at 1 part in 100, and could probably be used down to a concentration of 1 part in 500. One part of methyl mercury oleate in 1000 parts

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of paint afforded fairly good protection against mildew. One part of sodium pentachlorophenate in 100 parts of paint gave almost complete control of mold growth.

Before agents which have been found to prevent mold growth can be recommended, it is necessary to find out whether the substance has any undesirable effect on the paint film, and also whether it retains its full effectiveness after being mixed with the paint. W. P. K. Findlay. *J. Oil Colour Chemists' Assoc.; through Canadian Chemistry and Process Industries* 24, 592, 594 (1940).

Grades of Carnauba Wax

Carnauba wax is graded before export into:

North Country (anhydrous)
North Country (refined)
No. 2 North Country
No. 3 Chalky
No. 1 Yellow
No. 2 Yellow

No. 1 and No. 2 Yellow grades come from the new leaves of the palm tree and are exceptionally free from dirt and other foreign substances. Practically the only difference is in color, No. 1 being a lighter yellow and No. 2 having a slightly slate tinge. The Chalky grade is melted with the addition of water and contains 7-10 per cent of water when sacked, losing some of this on storage. The color is dull gray to dark green. North Country wax is melted dry, No. 2 and the anhydrous being about the same; refined North Country is filtered and is used more extensively because of a lack of dirt and foreign matter. D. F. Sweet. *Chem. Industries* 47, 379-82 (1940).

Stabilization of Pyrethrum

Samples of *pyrethrum cinerariaefolium* dried in the shade, in the sun and at 60° C., show a decreasing pyrethrum content in that order. Treatment with a current of sulfur dioxide (0.5-1 per cent) inhibits the activity of the oxidase present so that no loss of pyrethrum is noted in the stabilized product regardless of the method of drying. Mario Covello. *Ann. chim. applicata* 30, 88-98 (1940).

Evaluation of Tephrosia

In studying the insecticidal and larvicidal action of *Tephrosia vogelii* aqueous extracts were prepared by soaking 2 oz. of fresh leaves in 5 oz. of water for 24 hours and boiling the mixture. This extract had no larvicidal or insecticidal value. The larvicidal action of kerosene extracts against mosquitoes was essentially due to the kerosene itself. Acetone extracts, prepared by soaking 2 oz. of macerated leaves in 5 oz. of acetone for 3 days and heating on a water bath for 2 hours, were totally ineffective against mosquitoes but killed mosquito larvae when used at 1:10 dilution. Attempts to isolate tephrosin and deguelin from leaves of *T. vogelii* were unsuccessful. R. N. Chopra, D. N. Roy and S. M. Ghosh. *J. Malaria Inst. India* 3, 185-9 (1940); through *Chem. Abs.*

Red Squill Baits

Red squill, toxic to rats and mice, has the advantage of being comparatively harmless to domestic animals when consumed in small quantities. All poisons used for destroying rats and mice must be mixed with suitable ingredients to form an attractive bait. Experiments carried out by the Zoological Society of London to ascertain what foods were liked by rats gave the following list, rating plain bread at 100:

Bread	100
Oatmeal	80
Tallow	70
Bread and milk.....	60
Banana	60
Flour	50
Barley	50
Bloater paste	30
Smoked fish	20
Dripping	20
Lard	10

Rats which sometimes become poison shy are undoubtedly attracted by a change of diet.

The following formulas suggest suitable bait:

	Part
Red squill in fine powder....	1
Oatmeal	4
Red squill in fine powder....	1
Oatmeal	2.75
Dripping	1.25

Biscuits can be made by substituting flour for oatmeal in the second for-

mula. Mixes are often given a faint odor by the addition of a little oil of aniseed.

Formulas based on bread-crumbs, not moldy, are:

	Oz.
1. Ground dried breadcrumbs.....	52
Ground fresh pork fat.....	4
Ground fresh halibut, haddock or cod	16
Powdered red squill.....	8
2. Ground dried breadcrumbs.....	68
Glycerine, nut oil or corn oil..	4
Powdered red squill.....	8

Squill powder must be sold in sealed containers which will keep the contents dry. The lethal dose for a male rat is from 1 to 3 grains, which corresponds to 3 grains of squill per pound of body weight; half the amount is required to kill a female rat. Elliot B. Dewberry. *Manufacturing Chemist* 11, 287-8, 298 (1940).

Diluents for Rotenone

Diluents used in the preparation of rotenone-bearing dusts show a wide range in pH which is of considerable importance in the utilization of such materials as plant insecticides. Rotenone-bearing dusts prepared from highly alkaline diluents and kept in damp storage in the absence of light for a period of 7 days exhibited little or no change in pH but showed considerable loss in toxicity when used in kerosene extracts in tests with houseflies. Parallel acid dust samples kept under identical storage conditions retained their toxicity to the housefly. Dry or unmoistened alkaline and acid samples remained unchanged in this respect. The addition of sulfur to the alkaline dust mixtures prevented deterioration of the rotenone-bearing dust mixtures under the conditions of this experiment. T. C. Allen and J. W. Brooks. *J. Agr. Research* 60, 839-45 (1940).

New Textile Chemicals

An alphabetical list of textile chemicals by commercial names covers those developed since September 1939. Each product is briefly described as to nature and uses. *Am. Dyestuff Reporter* 29, 519-25 (1940).

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Legislative Trend

(From Page 98)

function of which will be to study each problem relating to state trade barriers and then to make recommendations to the federal government and to the respective states."

It is the opinion of your Legislative Committee and, we believe, the opinion of the majority of our members, that the pernicious use of the Model Insecticide and Fungicide Bill invites unnecessary legislation, additional State regulation and accompanying costly registration fees. Maryland is a typical example. The Manufacturing Chemists' Assn. forced this unnecessary law on the statute books, but it applies only to products for agricultural use. We predicted that the industry in this small State could not support these license fees, extension of the State inspection service and control. The State Chemist is a most conscientious official,—he did not ask for the law,—but now that it is on the books he feels it should be enforced. In a year he reports that the returns in license fees amounted to \$2,800, and his departmental budget for next year covering bare necessities is about \$7,000. He is forced to ask the next legislature to raise the brand fees to \$10 each, and the maximum registration cost is to be increased from \$75 to \$85. As far as your Chairman knows, the State Chemist has tried to be fair and impartial in the discharge of his duties and he would like to secure the support of our group in thus amending the present law. Your Chairman advised him we could not promise our support not only because of the increased cost to the membership but the effect on other States.

It is our intention to continue to have offered form amendments to State insecticide and fungicide bills, exempting household products of our members who are manufacturers, and similar amendments exempting all insecticides and disinfectants from pharmacy bills. As authority for such action, the following resolution is offered for adoption by this convention:

"BE IT RESOLVED, That it is the sense of the membership of the National Association of Insecticide and Disinfectant Manufacturers, Inc., that household insecticides, disinfectants, and other products used for the maintenance of sanitation in and about the dwelling be divorced strictly from products of an agricultural nature in the formulation of the provisions of various State and other local legislation affecting insecticides and fungicides."

Pennsylvania Law

Further tightening of the Pennsylvania law controlling the sale of insecticides, fungicides and disinfectants may be looked for next year.

In a Pittsburgh newspaper the following article appeared recently:

"A movement was under way to enact a law requiring manufacturers of insecticides to color the poisons so they can not be mistaken for food staples. Untinted roach powder, which got into the Salvation Army pancake batter, looks like flour.

"Dr. George J. Sarraf, Democratic member of the legislature, who probably will be chairman of the Committee on Public Health in the next session of the House, said he would introduce a bill in January requiring the tinting of poison powders. Dr. Sarraf is a physician and lives in Lawrenceville, where the Salvation Army center is situated.

"Another doctor-public official, I. Hope Alexander, City Health Director, also started steps looking toward some kind of a tinting law.

"Dr. Alexander called the attention of Dr. John J. Shaw, State Health Director, and the Insecticide Division of the U. S. Department of Agriculture, to the tragedy, and demanded that some regulatory action be taken."

Please bear in mind that in the coming winter and spring, 44 states will be in regular session. Our industry will have to be alert, particularly with reference to measures relating to insecticides, fungicides, drugs and poisons.

Mildew Prevention

The principal requirements of a fungicide to be used on canvas, duck, drill etc. subjected to outdoor weather are water-insolubility and applicability to fabric. In testing this type of product it was found that by simulating rainfall as contrasted with simple immersion, a totally different series of results were obtained. An exceedingly drastic method of treatment was evolved in which water is sprayed from a showerhead onto samples of treated fabric placed flat upon a screen. It is believed that a fungicidal treatment of cloth which would withstand this showering and then show no growth of mildew on subsequent inoculation, would provide a cloth which should fully withstand conditions of field exposure.

A strain of *Chaetomium globosum* was selected as the test organism since it is a rapid destroyer of cellulose and has been found a common cause of damage and destruction of awnings, tents, bags, etc. The cloth

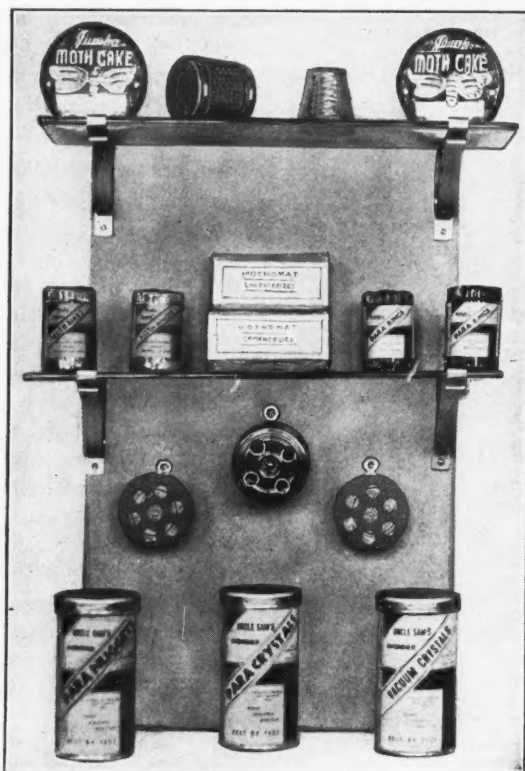
samples are inoculated by "grafting," remaining in contact with young mycelia of fresh culture for 48 hours. The cloth samples are then removed to other petri dishes and incubated for 2-3 weeks at 85° F.

A treatment of fabric to withstand the above conditions of test has been developed and patents applied for. The cloth is first impregnated with a solution of sodium pentachlorophenate so that it retains 3 per cent of the chemical in terms of dry weight of the cloth. Excess liquid is removed by passing the fabric through ordinary rollers, after which the cloth passes into a bath containing a solution of 2.5 per cent of lead acetate plus 0.25 per cent of dry caustic soda. After again passing through rollers the cloth is dried. By this method lead pentachlorophenate is formed *in situ* upon the cloth. W. A. Stringfellow. *Am. Dyestuff Reporter* 29, P. 266-9 (1940).

Formaldehyde Disinfectant

Soap solutions of formaldehyde prepared from a castor oil-potash soap deteriorate when diluted with hard water. The substitution of sulfonated castor oil and polysulfonated oils as used in textile practice is recommended.

To prepare the disinfectant mix 1 kg. of castor oil and 250 grams of concentrated sulfuric acid, stir for 2 hours at 35°C., and pour into a chilled solution containing 50 grams of sodium chloride and 20 grams of soda ash in 1 liter of water. Stir for 30 minutes below 33°C. Neutralize the oily upper layer with ammonium hydroxide, dilute to 5 kg., treat with 4 kg. of formaldehyde and make up to 20 kg. with water. Similarly 250 grams of polysulfonated oil are diluted with 750 grams of water, treated with 1 kg. of formaldehyde and diluted to 5 kg. with water. These soapy formaldehyde solutions are resistant to hard and acid waters and have a maximum disinfectant action. G. Lusignani and A. Mossini. *Boll. chim.-farm.* 79, 101-2 (1940); through Chem. Abs.



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NEWS

Murray with Pure Oil

Christopher A. Murray, entomologist, formerly with Baldwin Laboratories, Saegertown, Pa. and the McLaughlin-Gormley-King Co., Minneapolis, has become associated with the Pure Oil Co. in their research and testing laboratories at Northfield, Ill. Mr. Murray has been the author of numerous articles on entomological and chemical subjects relating to insecticides.

Roche Named A.C.S. Chairman

Dr. James N. Roche, research chemist of Koppers Co., Pittsburgh, recently became chairman of the Pittsburgh section of the American Chemical Society. Associated with the Koppers company since 1930 conducting studies in the field of coal-tar derivatives, Dr. Roche previously taught chemistry at the University of Pittsburgh.

Accept Disinfectant Standards

Recommended revisions in the commercial standards for Coal Tar Disinfectant (Emulsifying Type), CS70-38, and Cresylic Disinfectants, CS71-38, which were submitted to the trade last November by the National Bureau of Standards, U. S. Department of Commerce, have been accepted by an estimated majority. In the absence of active opposition, the commercial standards now identified as Phenolic Disinfectant (Emulsifying Type), CS70-41, and Phenolic Disinfectant (Soluble Type), CS71-41, may be considered effective for new production as of February 1, 1941, according to an announcement from the National Bureau of Standards.

Chicago Perfumers Elect Black

Carl M. Black of S. B. Penick & Co. was elected president of the Chicago Perfumery, Soap and Extract Association for 1941, at the re-

cent annual meeting. Mr. Black is a veteran of the association's activities and has played an important part in



CARL M. BLACK

the success of many of them. Other officers elected were vice president, William H. Schutte of P. R. Dreyer Inc., and secretary-treasurer, C. A. Hammond of F. N. Burt Co.

Western Spray Project to Meet

The annual meeting of the Western Cooperative Spray Project will be held at the Roosevelt Hotel, Seattle, February 13-14. The meetings on Feb. 13 and the forenoon of Feb. 14 are to be open only to research workers of the U. S. Department of Agriculture and State Experiment Stations but on the afternoon of Feb. 14 there will be an open meeting with representatives of commercial companies and fieldmen of fruit growers' associations, preceded by a luncheon for all groups.

Hy-Glo Holds Annual Party

Hy-Glo Products Co., sanitary supplies, Owosso, Mich., recently held its second annual banquet and party which was attended by some 170 distributors, dealers, salesmen and employees. H. B. Sagemiller, president of the company, spoke

briefly on the progress the firm had made during the year and the addition of several new products to those manufactured under the "Hy-Glo" label. The new products include furniture polishes, drain pipe cleaners and cleansers for marble and cement.

Lethelin & W-B Combine

Lethelin Products Co., Mount Vernon, N. Y., has recently been absorbed in a merger with W-B Chemical Co. also of Mount Vernon. The combined companies under the W-B name are located at 341 North High Street.

Hold Southern P.C.O. Meeting

The third annual Southern Pest Control Operators' Conference was held at Louisiana State University, Jan. 27 to 29, under the joint sponsorship of the university and the National Pest Control Association. Prof. O. W. Rosewall of Louisiana State University and the members of the staff arranged a complete three-day program of lectures.

Salesmen Install Officers

Walter D. Merrill, of Joseph Turner & Co., Ridgefield, N. J., was installed as president of the Salesmen's Association of the American Chemical Industry, at a meeting January 23 at the Chemists' Club, New York. Other officers installed were: Carl O. Lind, of Dow Chemical Co., vice-president; Gerald S. Furman, of Merck & Co., treasurer; and John J. Butler, of West Virginia Pulp & Paper Co., secretary.

Fortune Features Canco Story

A feature of the January issue of *Fortune* magazine was the story of American Can Co., New York. One of the highlights of the article is the graphic description of the Canco research department in which many canning improvements have been developed.

McCann Chemical Moves

McCann Chemical Co., Louisville, Ky., janitors' supplies, has just moved to larger quarters at 1022 Main Street.

Lubin, Winer, End Partnership

Albee S. Lubin and Abraham Winer recently dissolved the partnership of Pilgrim Laboratories, sanitary supplies, Boston, and are now operating separate concerns. Mr. Lubin has organized under the name Albee Sanitary Products Co. at 60 India Street, while Mr. Winer is continuing the business of Pilgrim Laboratories at the former address of the firm, 35 India Street.

Arsenical Insecticide Fatal

An arsenical insecticide was blamed by Chicago police for the death of one man and serious illness of two others in that city last month. The trio who were employed by the Signode Steel Strapping Company, became ill after drinking fresh-made coffee which was kept in a locker where the insecticide had been scattered. Therea Hill, age 47, died from the effects of the poison, while James Mengler, 44, and John L. Kapche, 56, recovered after hospital treatment.

Chicago Rat Campaign Data

Chicago's municipal rat extermination campaign resulted in the death of 870,300 rats between last August 10 and January 1 of this year, according to latest tabulations. Approximately 830,000 rats, however, still range the city's by-ways, according to Commissioner of Public Works Oscar E. Hewitt. Of these, he says, 553,000 are in stores, freight sheds, commercial buildings, industrial plants, private homes and garages. The city appropriated \$5,000 for purchase of poison bait last year and WPA labor was used to apply it.

Sanitation For Citrus Packers

Killing mold spores which are responsible for decay of citrus fruit in packing houses is best carried out by fumigating with chlorine gas while fruit storage rooms are empty, according to an article in the November issue of the *California Citrograph* by W. C. Waid and J. R. MacRill, of the California Fruit Growers Exchange. In rooms not tight enough for effective fumigation with chlorine gas, the authors advise spraying walls, ceil-

ings and floors with a pine oil emulsion or other effective fungicide. Nitrogen trichloride is now used in the Decco process for control of decay in many packing houses.



M. J. FLANAGAN

... vice-president of Federal Varnish Co., just appointed chairman of the entertainment committee for the mid-year meeting of the National Association of Insecticide & Disinfectant Manufacturers.

Name Settle McCormick V-P

Norman C. Settle, for twenty years associated with McCormick & Co., insecticides, Baltimore, was recently named vice-president of the company. Elected to a board of managers were: E. K. Crone, Washington, D. C.; R. H. Randall, New York; C. E. McSwain, Little Rock, Ark.; H. H. Meyer, Knoxville, Tenn.; F. C. Norman, N. J., and R. L. Irwin, Houston.

FTC Hits Mothproof Claim

In answer to a complaint made by the Federal Trade Commission, Bernhardt Peterson, trading as Berlou Manufacturing Co., Marion, Ohio, has agreed to cease using the words "permanent" or "life-time" as descriptive of an alleged mothproof preparation designated "Berlou."

Dearborn Chemical Building

Dearborn Chemical Co., 310 South Michigan Ave., Chicago, is constructing a \$60,000 addition to its sanitary chemical manufacturing plant at 1029 West 35th St. The company produces cleaning compounds and water treating preparations.

FTC Checks Purex Claims

Purex Corp., Ltd., Southgate, Cal., has recently been ordered by the Federal Trade Commission to cease representing that a solution of "Purex" containing any amount less than 10 per cent of the product is an effective germicide for the surface treatment of cuts or sores. The company is also ordered to cease making claims that a solution containing two tablespoons of "Purex" for each gallon of water is a competent disinfectant for use on metal or wood surfaces except in cases where the surfaces have previously been thoroughly washed.

Ex-Pyrethrum Importer Dies

Malcolm McKensie, who had been for many years identified with the essential oil and pyrethrum flower trades, died recently at the age of 80 in Plainfield, N. J. At one time in business as an essential oil importer under the firm name of McKensie Brothers, he later joined Antoine Chiris Co., essential oils, and part of his eight years service was as a director of the American branch in New York. In 1924, as McKensie & Co., he became the exclusive representative of the producers of pyrethrum flowers grown in the Kenya Colony, British East Africa.

Fritzsche Opens Texas Branch

Fritzsche Brothers, Inc., New York, recently announced the opening of a new sales branch in Houston, in charge of T. F. May who will cover the states of Texas, Louisiana, Mississippi, and parts of Arkansas, Alabama and Florida.

Raticide Stipulation

Charles Denny, operating as Sur-Rid Products Co., St. Louis, has recently entered into an agreement with the Federal Trade Commission to discontinue representing that every lot of "Sur-Rid Rat Killer" is tested, or that he guarantees the killing power of the product. He also has agreed to stop using the term "Sur-Rid" or implying that the product is sure in action and that use of it will rid premises of rats.

Hold Purdue PCO Conference

The Fifth Annual Pest Control Operators' Conference was held at Purdue University, Lafayette, Ind.,



PROF. J. J. DAVIS

January 6-10, with approximately one hundred operators in attendance. In the session on insecticides, speakers included the following: E. M. Searls, University of Wisconsin, "Particle Size in Relation to Effectiveness of Liquid Insecticides"; F. L. Campbell, Ohio State University, "Methods of Testing Insecticides Against Bedbugs and Cockroaches"; A. M. Akers, Rose Exterminator Co., Cleveland, "The Relation of Application to Efficiency"; and Cady S. Corl, Allaire-Woodward Co., Peoria, Ill., "Analysis of Chemicals Used by the Pest Control Operator." J. J. Davis of Purdue University was in general charge of the conference program.

Mfrs. Representative Dies

L. C. Morris, Atlanta representative for Aromatics Products, Inc., New York, died last month after a prolonged illness. Before his association with Aromatics Products, Inc., whom he had represented for five years, he had been Southern representative for Givaudan-Delawanna, Inc., New York, for some ten years.

Skunk As Civet Substitute

A perfume fixative, "Petra," derived from the protective oil of the American skunk through a process developed recently by Charles V. Sparhawk, Sparhawk Co., Sparkill,

N. Y., has been suggested as an inexpensive substitute for fixatives made from civet or musk. The new fixative, it is said, has been used successfully for blending with many flower oils including rose, jasmine, lily of the valley and others.

New Continental Can Plant

Continental Can Co., New York, recently announced the award of a contract for construction of a new can-making plant at St. Louis, which will consolidate and increase existing manufacturing facilities which the company already has there.

Blackmer Pump Expands

Contracts for an addition to the plant and office building have recently been awarded by Blackmer Pump Co., Grand Rapids, Mich. The new addition will be of brick and concrete construction, will double the space of the engineering department, and increase office, testing and production facilities.

Bagley with Buckingham

Buckingham Wax Corp., L. I. City, N. Y., has just set up a new technical research department under the direction of Horace M. Bagley, who has just joined the Buckingham organization. Mr. Bagley, who was formerly with R. M. Hollingshead Corp., Camden, N. J., will also supervise factory production. Three new products have just been added to the Buckingham line of floor materials—wax base floor cleaner, liquid scrub soaps and metal polishes. A new type no-rubbing wax is also being offered, for which improved anti-skid and waterproof qualities are claimed.

REMINDER...

The 16th annual Drug & Chemical Dinner will be held at the Waldorf-Astoria Hotel, New York, on March 13, 1941. If you have not made reservations for yourself and staff, why not do it today? Just phone or write to John C. Ostrum, New York Board of Trade, 41 Park Row, New York.

Essential Oil Assn. Elects

Charles Fischbeck, re-elected president of the Essential Oil Association of U.S.A., in an address at



CHARLES FISCHBECK

the fourteenth annual meeting of the organization held at the Hotel Warwick, New York, last month, forecast additional supply difficulties, higher taxes and more stringent government regulation in the aromatic chemical industry.

In view of present world conditions, Mr. Fischbeck said, the industry in the United States should take on added importance, although, he continued, it was not possible to paint too optimistic a picture of the future. Mr. Fischbeck is vice-president of P. R. Dreyer Inc., New York.

Edward V. Killeen, former president of George Lueders & Co., and founder of the organization, was guest of honor at the meeting. Reports were presented by: Dr. E. C. Kunz, of Givaudan-Delawanna, Inc., on the work of the scientific section; Robert B. Magnus, of Magnus, Mabée & Reynard, Inc., treasurer; and William Schilling, Jr., of Norda Essential Oil & Chemical Co., on the work of the organization committee.

Officers of the association were re-elected as follows: vice-president, V. H. Fisher, of Dodge & Olcott Co.; secretary and treasurer, Robert Magnus; executive committee, John H. Montgomery, of Fritzsche Bros., Inc.; H. C. Ryland, of H. C. Ryland, Inc.; Edward V. Killeen; Dr. E. C. Kunz and William Schilling, Jr.

Elected Head of Health Board

Herbert B. Larner, manager of the vitamin division of S. B. Penick & Co., New York, was recently re-elected president of the board of health of Glen Ridge, N. J. Mr. Larner is a former sanitary officer of the United States Public Health Service.

Monsanto Plans Defense Unit

Monsanto Chemical Co., St. Louis, recently announced plans for the building of a new chemical plant adjacent to its present establishment at Monsanto, Ill., to meet defense needs. The cost of the plant is to be defrayed by the government which will retain title to the buildings and installations. The plant will be operated and its products furnished at cost, with no profit accruing to the company.

Sprays for Air-raid Shelters

One of the reports made by the committee to inquire into the health conditions of air-raid shelters used for sleeping purposes is that there is sufficient evidence for considering that the risk of air-borne infection may be reduced by spraying the atmosphere of shelters. On account of its easy procurability, cheapness, and intrinsic merits, the disinfectant recommended is sodium hypochlorite

in aqueous solution. The type of spray will vary from mechanically operated to hand-operated apparatus, according to the size and type of the shelter. *Chem. Trade J. & Chem. Engineer* 107, 294 (1940).

Disinfectant Stipulation

Linco Products Corp., Chicago, in answer to a complaint of the Federal Trade Commission, has agreed to cease advertising that its product "Linco" will remove all stains or discolorations other than those which are capable of being oxidized; that it kills all germs or positively disinfects and sterilizes; and that all bacteria and infectious germs are removed by the product.

Owens Opens New Division

Owens-Illinois Pacific Coast Co., San Francisco, recently announced that it will open a new manufacturing division for molded plastic closures. E. L. Fraser will be in charge of closure sales.

Foot-Pep Stipulation

A. Greenberg, Sol Bassan and H. Greenberg, trading as Foot-Pep Laboratories, and Foot-Pep Sales, Chicago, have entered into an agreement with the Federal Trade Commission to cease advertising that their preparation "Foot-Pep" is a competent remedy for athlete's foot.

"Ratskill" Stipulation

An agreement to cease advertising that "Ratskill" is the most effective exterminator to use against rats has recently been made by Meyer Brothers Drug Co., St. Louis, in a stipulation with the FTC. The company also has agreed to stop claiming that the Department of Agriculture has said that red squill is the most successful of all rat poisons. According to its stipulation, the company advertised its product as "a red squill rat exterminator."

Standard Synthetics Moves

Standard Synthetics, Inc., essential oils and aromatics, New York, have just moved into new and larger quarters at 119 West 25th Street. The manufacturing activities of the company have been increased, it was announced recently.

McLeod Absorbs Exterminators

McLeod Exterminating Co., Buffalo, has just taken over City Exterminating Co. and Guarantee Exterminating Co., both of Buffalo. The merger will entail a division of activities and the new company will operate as City Exterminating Co.

Washing Milk Cans

Studies on washing milk cans show the need of an acid rinse to remove film containing bacteria which remains after cleansing with alkaline detergent solutions, hot water rinses and steaming. A pH value of 6-6.5 in the rinse water is satisfactory; gluconic acid was the least corrosive to the can metal. The bacterial counts of milk cans treated with the acid-steam rinse were much lower than control cans simply steamed. Milton E. Parker. *Food Ind.* 12, No. 10, 39-42 (1940).

Owens-Ill. Advance Adams

Joseph F. Adams, formerly manager of the oil and paint container sales of Owens-Illinois Can Co., has been promoted to the position of national accounts manager. Charles E. McLaughlin, formerly of the advertising staff, has been made merchandising manager.

Percy C. Magnus, president of Magnus, Mabey & Reynard, Inc., New York, addresses a group of MM&R representatives at the general annual sales convention of the company held last month at the Hotel Warwick, New York.



Announce NAIDM Committees

New committee appointments for 1941 have just been announced as follows by William J. Zick, president of the National Association of Insecticide & Disinfectant Manufacturers:

Insecticide Section

General Chairman, John N. Curlett
McCormick & Co., Baltimore

Insecticide Scientific Committee

Chairman: A. E. Badertscher, McCormick & Co., Baltimore. W. A. Simanton, Gulf Research & Development Corp., Pittsburgh. Alfred Weed, John Powell & Co., New York. Franklin C. Nelson, Stanco, Inc., Elizabeth, N. J. A. J. Grady, Sinclair Refining Co., East Chicago. C. R. Cleveland, Standard Oil Co. of Indiana, Chicago. R. L. Speer, Shell Oil Co., New York. L. D. Benedict, Midway Chemical Co., Chicago. R. Wotherspoon, Derris, Inc., New York. M. Doner, J. R. Watkins Co., Winona, Minnesota. D. F. Murphy, Rohm & Haas Co., Bristol, Pa. G. A. Bowden, A. S. Boyle Co., Jersey City, N. J. H. G. Whitmire, Whitmire Research Corp., St. Louis. Cady S. Corl, Allaire Woodward Co., Peoria, Ill. Jared H. Ford, Kilgore Development Corp., Washington, D. C. Harold Lederer, Lederer Bact. Laboratories, Philadelphia, Pa.

Mothproofing Investigations

Chairman: F. W. Fletcher, Dow Chemical Co., Midland, Mich. R. B. Trusler, Davies-Young Soap Co., Dayton, Ohio. E. G. Klarmann, Lehn & Fink Products Corp., Bloomfield, N. J. C. W. Kimball, Foster D. Snell Inc., Brooklyn. A. H. Goddin, Pest Control Laboratory, Wilmington. D. F. Murphy, Rohm & Haas Co., Bristol, Pa. W. A. Simanton, Gulf Research & Development Corp., Pittsburgh. Franklin C. Nelson, Stanco, Inc., Elizabeth, N. J. Alfred Weed, John Powell & Co., New York.

Cattle Spray Committee (Methods of Testing)

Chairman: Franklin C. Nelson, Stanco, Inc., Elizabeth, N. J. D. F. Murphy, Rohm & Haas Co., Bristol, Pa., C. R. Cleveland, Standard Oil Co. of Indiana, Chicago. Alfred Weed, John Powell & Co., New York. Friar Thompson Jr., Hercules Powder Co., Wilmington. H. E. Whitmire, Whitmire Research Corp., St. Louis.

Associated with foregoing insecticide section committees are the following:

Dr. Lon A. Hawkins, in charge, Division of Control Investigations, Bureau of Entomology & Plant Quarantine, U. S. Department of Agriculture, Washington, D. C.

Dr. E. R. McGovran, Control Investigations, Bureau of Entomology

& Plant Quarantine, U. S. Dept. of Agriculture, Beltsville, Md.

Dr. F. L. Campbell, Department of Entomology, Ohio State University, Columbus, Ohio.

Insecticide Marketing Committee

Chairman: Robert C. White, Jr., Robert C. White Co., Philadelphia. A. W. Morrison, Socony-Vacuum Oil Co., New York. H. W. Moburg, Rex Research Corp., Toledo.

Disinfectant Section

General Chairman: Henry A. Nelson
Chemical Supply Co., Cleveland

Disinfectant Scientific Committee

Chairman: E. G. Klarmann, Lehn & Fink Products Corp., Bloomfield, N. J. W. A. Hadfield, General Laboratories, Philadelphia. B. G. Philbrick, Skinner & Sherman Inc., Boston. G. F. Reddish, Lambert Pharmacal Co., St. Louis. J. C. Varley, Baird & McGuire Inc., St. Louis. Friar Thompson Jr., Hercules Powder Co., Wilmington. C. L. Weirich, C. B. Dolge Co., Westport, Conn. W. W. Allan, Dow Chemical Co., Midland, Mich. J. H. Carpenter, Koppers Co., Pittsburgh. W. B. Eddy, Rochester Germicide Co., Rochester.

Disinfectant Marketing Committee

Chairman: Peter Dougan, Merck & Co., Rahway, N. J. J. H. Bender, Clarkson Chemical Co., Williamsport, Pa. H. W. Hamilton, White Tar Co., of N. J. Inc., Kearny, N. J. Guy P. Robbins, Geo. H. Robbins Disinfecting Co.

Export Standards Committee

Chairman: John A. Marcuse, West Disinfecting Co., Long Island City, N. Y. E. G. Klarmann, Lehn & Fink Products Corp., Bloomfield, N. J. G. A. Bowden, A. S. Boyle Co., Jersey City, N. J. W. S. Thornhill, Shell Oil Co., New York. A. W. Morrison, Socony-Vacuum Oil Co., New York.

Sanitary Specialties Section

General Chairman: J. L. Brenn
Huntington Laboratories Inc.
Huntington, Indiana

Sanitary Specialties Scientific Committee

Chairman: R. B. Trusler, Davies-Young Soap Co., Dayton, O. Melvin Fuld, Fuld Bros., Baltimore. R. L. Lockhart, Candy & Co., Chicago. M. L. Magee, T. F. Washburn Co., Chicago. C. E. Smith, Socony-Vacuum Oil Co., New York.

Sanitary Specialties Marketing Committee

Chairman: Geo. L. Simmonds, U. S. Sanitary Specialties Corp., Chicago. Guy P. Robbins, Geo. B. Robbins Disinfecting Co., Boston.

General Committees

Research Program

Chairman: W. B. Eddy, Rochester Germicide Co., Rochester. C. L.

Weirich, C. B. Dolge Co., Westport, Conn. W. A. Hadfield, General Laboratories, Philadelphia. G. F. Reddish, Lambert Pharmacal Co., St. Louis. Jack Varley, Baird & McGuire Inc., St. Louis.

Legislative

Chairman: C. L. Fardwell, McCormick & Co., Baltimore. H. W. Hamilton, White Tar Co. of N. J., Kearny, N. J. R. H. Young, Davies-Young Soap Co., Dayton, Ohio and N.A.I.D.M. Consultant: H. C. Fuller, Washington, D. C.

Membership Committee

Chairman: C. L. Weirich, C. B. Dolge Co., Westport, Conn. Harold Noble, S. B. Penick & Co., New York. R. F. Joyce, Derris Inc., New York.

Market Survey Committee

Chairman: Walter Silbersack, A. S. Boyle Co., Jersey City, N. J. H. W. Moburg, Rex Research Corp., Toledo. John A. Marcuse, West Disinfecting Co., Long Island City, N. Y.

Associated with above committee: W. O. Buettner, Secy., National Pest Control Association, Inc., Brooklyn.

Specifications and Purchases Committee (Insecticides, Disinfectants, Sanitary Supplies, etc.)

Chairman: Gordon M. Baird, Baird & McGuire Inc., Holbrook, Mass. R. H. Young, Davies-Young Soap Co., Dayton, Ohio. Cady S. Corl, Allaire Woodward Co., Peoria, Ill. R. O. Cowin, Standard Oil Co. (Ohio), Midland Bldg., Cleveland.

American Museum of Health Committee

Chairman: John A. Marcuse, West Disinfecting Co., Long Island City, N. Y. Charles Opitz, John Opitz Inc., Long Island City. Dudley Bachrach, Clifton Chemical Co., New York.

Convention Committee—

Mid-Year Meeting—June, 1941

General Chairman: N. J. Gothard
Sinclair Refining Co.
East Chicago, Ind.

Program

Chairman: R. F. Neptun, Allaire Woodward Co., Peoria, Ill. G. F. Reddish, Lambert Pharmacal Co., St. Louis. G. L. Simmonds, U. S. Sanitary Specialties Corp., Chicago.

Arrangements

Chairman: Ira P. MacNair, MacNair-Dorland Co., New York. John Powell, John Powell & Co., New York. T. F. Tribble, Magnus, Mabee & Reynard, Chicago.

Entertainment

Chairman: M. J. Flanagan, Federal Varnish Co., Chicago. Edgar E. Brand, L. Sonneborn Sons, Chicago. Fred Hogg, Hercules Powder Co., Chicago.

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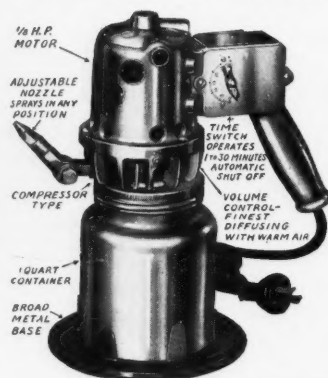
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*The Right Sprayer
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Whether your customer needs an economical sprayer for the occasional small job, or a powerful machine for daily spraying in a great warehouse, there is a Breuer quality sprayer which exactly fits his needs. The nine Breuer Models include sizes from 1/8 H.P. to 1 H.P.—capacities from one pint to one gallon—compressor and fan types—automatic and toggle-switch models.

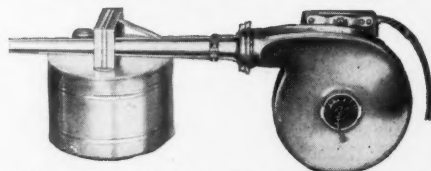
BETTER THAN EVER! MODEL 54



The most popular model in the TORNADO line has now been made more convenient, practical and efficient than ever. It has a husky GE Motor, adjustable nozzle, air volume control to regulate density of spray, one-quart metal

container, broad metal base, 20 ft. of rubber covered cord. Patented principle warms liquid above room temperature for maximum diffusion and kill. Thirty minute automatic time switch. A quality compressor-type sprayer at low cost.

FOR LARGE AREAS



Model 6A (1/3 H.P.) Model 8A (3/5 H.P.) Model 10A (1 H.P.)

These powerful blower-type sprayers project the spray instantly for distances of 20 to 40 feet, giving fast, thorough coverage of large areas. The spray easily reaches remote corners and high ceilings. One gallon metal container. Ball bearing GE Motors—no oiling. Particularly recommended for warehouses, theatres, dairy barns and other large buildings.

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5118 N. RAVENSWOOD AVENUE CHICAGO, ILLINOIS

We do not sell insecticides. Our business is manufacturing sprayers. Patented in U. S. A. and Foreign Countries.

Sports

Golf Committee

Chairman: Dudley Lumm, Givaudan-Delawanna Inc., 605 West Washington Blvd., Chicago. F. Y. Klock, McLaughlin-Gormley-King, Chicago. Thomas Morgan, MacNair-Dorland Co., Chicago.

Horse-shoe Pitching

Wallace Thomas, Gulf Oil Corp., Pittsburgh.

Transportation Committee

Robert B. Magnus, Magnus, Mabey & Reynard, Inc., New York.

Associate Members Committee

Chairman: L. A. Trevisan, American Can Co., New York. F. I. L. Lawrence, Atlantic Refining Co., Philadelphia. M. Lemmermeyer, Aromatic Products Inc., New York.

Coast PCOs To Confer

The fourth annual Pacific Coast Pest Control Operators Conference will be held at the University of California, Berkeley, February 20-22. Conference headquarters will be at the Hotel Durant and registration will start there the evening of February 19. The fee for the conference is \$6.00 and for the laboratory work registrants are asked to bring along forceps, lenses and insect specimens for mounting. A com-

pletely new program of lectures is promised together with three new sections of laboratory work. Prof. William B. Herms will act as conference director, assisted by Dr. G. F. MacLeod. George A. Rader will be general chairman of the conference.

Diamond to Build in Texas

Diamond Alkali Co., Pittsburgh, plans to construct plants in Texas for the manufacture of liquid silicate of soda and other silicate products to supplement its plant at Painesville, Ohio. The company has established headquarters at Houston and formed an affiliate, Gulf Coast Chemical Co., to act as distributor and sales agency for the Texas plants.

Greene Co. At New Address

Greene Trading Co., New York, importer and exporter, has recently moved to 70 Pine Street.

Solid Germicide

Sulfonated salicylic acid, naphthalene or naphthols are mixed with cresol, heated at 150° C. and

cooled to make a solid germicidal preparation. Akuri Sakai. Japanese Patent No. 128,949.

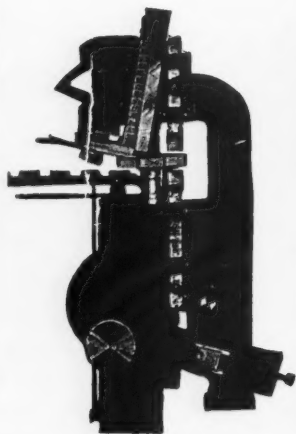
First Eastern PCO Conference

The First Eastern Pest Control Operators' Conference was held at the Massachusetts State College, Amherst, Mass., Jan. 13-15, with over one hundred operators in attendance. C. P. Alexander, head of the entomology department of M. S. C., acted as dean of the conference, assisted by Prof. A. I. Bourne. The session on insecticides featured talks by T. R. Hansberry of Cornell University, "Importance of Chemistry in Pest Control", George Chapman of American Cyanamid, "Fumigants" and Bernard Barton, Rohm & Haas, "Synthetic Insecticides". Prof. J. J. Davis of Purdue University acted as toastmaster at the banquet, and Dr. F. J. Sievers, director of the Massachusetts Agricultural Experiment Station was guest speaker. Officers of the National Pest Control Association cooperated in arranging for and conducting this first eastern conference which it is expected will now be a regular annual event.

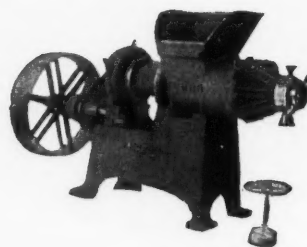
PCOs Confer at M.S.C.



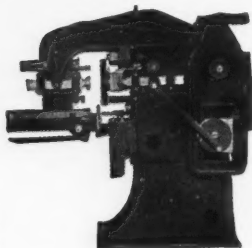
Special Offerings of **SOAP MACHINERY** *Completely Rebuilt!*



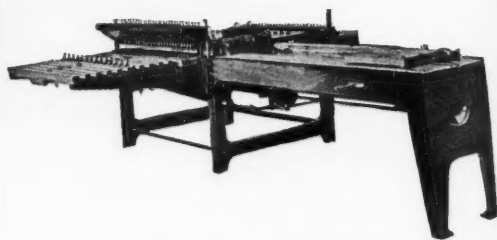
H-A SOAP MILL
This 4-roll granite toilet soap mill is in A-1 shape. Latest and largest size rolls.



Single screw soap plodders with 6, 8, 10 or 12 inch screws. All completely rebuilt and unconditionally guaranteed.



4 JONES AUTOMATIC
combination laundry and toilet soap presses. All complete and in perfect condition.



2 Automatic Power Soap Cutting Tables.

Small size fully automatic Jones toilet soap press. Capacity 150 to 200 small cakes per minute. A real buy at an attractively low price. Has been completely rebuilt in our own shops.

**INVESTIGATE
THESE SPECIAL
BARGAINS**

**Johnson Automatic Soap
Chip Filling, Weighing
and Sealing Machines
for 2 lb. and 5 lb. Pack-
ages guaranteed in per-
fect condition.**

ADDITIONAL REBUILT SOAP MACHINERY

All used equipment rebuilt in our own shops and guaranteed first class condition.

H-A, 1500, 3000, 4000, 5000 lbs. capacity. Steam Jacketed Crutchers.

Dopp Steam Jacketed Crutchers, 1000, 1200, 1500 lbs. and 800 gals. capacity.

Ralston Automatic Soap Presses.

Scouring Soap Presses.

Empire State, Dopp & Crosby Foot Presses.

2, 3, 4, 5 and 6 roll Granite Toilet Soap Mills.

H-A 4 and 5 roll Steel Mills.

H-A Automatic and Hand-Power slabs.

Proctor & Schwartz Bar Soap Dryers.

Blanchard No. 10-A and No. 14 Soap Powder Mills.

J. H. Day Jaw Soap Crusher.

H-A 6, 8 and 10 inch Single Screw Plodders.

Allbright-Nell 10 inch Plodders.

Filling and Weighing Machine for Flakes, Powders, etc.

Steel Soap frames, all sizes.

Steam Jacketed Soap Remelters.

Automatic Soap Wrapping Machines.

Glycerin Evaporators, Pumps.

Sperry Cast Iron Square Filter Presses, 10, 12, 18, 24, 30 and 36 inch.

Perrin 18 inch Filter Press with Jacketed Plates.

Gedge-Gray Mixers, 25 to 6000 lbs. capacity, with and without Sifter Tops.

Day Grinding and Sifting Machinery. Schultz-O'Neill Mills.

Day Pony Mixers.

Gardiner Sifter and Mixer.

Proctor & Schwartz large roll Soap Chip Dryers complete.

Doll Steam Jacketed Soap Crutchers, 1000, 1200 and 1350 lbs. capacity.

Day Talcum Powder Mixers.

All types and sizes—Tanks and Kettles.

Ralston and H-A Automatic Cutting Tables.

Soap Dies for Foot and Automatic Presses.

Broughton Soap Powder Mixers.

Williams Crutcher and Pulverizer.

National Filling and Weighing Machines.

*Send us a list of your surplus equipment—
we buy separate units or complete plants.*

NEWMAN TALLOW & SOAP MACHINERY COMPANY

1051 WEST 35th STREET, CHICAGO

Phone Yards 3665-3666

Our Forty Years Soap Experience Can Help Solve Your Problems

CLASSIFIED ADVERTISING

Classified Advertising—All classified advertisements will be charged for at the rate of ten cents per word, \$2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, \$1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of Soap, 254 West 31st St., New York.

Positions Wanted

Manager: Soap maker-chemist, A.B., A.M. with extensive practical plant experience in soap manufacturing and glycerine recovery. Can manage small or large plant. Now engaged but desires new connection. Address Box No. 972, care Soap.

Soap Expert and Chemist, 18 years practical experience, 9 years with present firm in the East desires position in the West. Specialist in all types potash and textile soaps, detergents and dry mixed cleaning compounds. Can develop new products, train men and guarantee results. Address Box No. 963, care Soap.

Soap Plant Manager: Man equipped to handle the complete management of small and medium size soap factory with an extensive background in practical production and management with several large soapers, desires new connection in the industry. Record will stand full investigation. For further details, communicate with Box No. 965 care Soap.

Entomologist M.S.—Desires position with chemical or insecticide firm. 3½ years experience in field and laboratory testing of insecticides and fungicides. Address Box No. 968, care Soap.

Soap Expert—Man 40 years of age, 15 years experience in Germany in soap manufacture, technical graduate, desires connection with some American company in any capacity. Well recommended from American sources and well grounded in soap plant practice. For further details, communicate with Box No. 966, care Soap.

Chemist and Soapmaker—man with twelve years experience in the most modern methods of toilet soap manufacture in Europe and the U. S. desires new position. Technical graduate. Capable taking full charge of plant. Address Box No. 977, care Soap.

Soap Maker and Chemist with many years' experience making all kinds of laundry and toilet soaps, seeking change. Good references. Can take complete charge of manufacturing. Address Box No. 975, care Soap.

READY for 1941 with CONSOLIDATED Rebuilt Equipment

Serving Industry for 24 Years

SELECTED SPECIALS

- 2—Pneumatic Scale Carton Packaging Units.
- 1—Sargent 54" x 72" single Chilling Roll.
- 2—Proctor & Schwartz Soap Chip Dryers, steel frame; 1 with single cooling roll.
- 1—Houchin Para Block Press, with 1½" x 3" die.
- 3—Soap Foot Presses.
- 2—Jones Vertical Automatic Soap Presses.
- 1—Jones Horizontal Automatic Soap Press.
- 3—Houchin Plodders, 10", 8".
- 2—Automatic Soap Wrapping Machines.

Crutchers
Soap Kettles
Powder Mixers
Granite Mills
Plodders
Slabbers

Foot and Automatic
Soap Presses
Cutting Tables
Pulverizers
Soap Pumps
Soap Chippers

Filter Presses
Soap Frames
Powder Fillers
Labellers
Tanks
Boilers

Send for New Illustrated Circular

CONSOLIDATED PRODUCTS CO., INC.

15-21 PARK ROW
BArclay 7-0600



NEW YORK, N. Y.

Cable Address: Equipment

We buy your idle Machinery—Send us a list.

3

NEW ~ Outstanding

SCIENTIFICALLY TESTED—
WATERPROOF • SELF-POLISHING

FLOOR WAXES

Now available for the
JANITOR SUPPLY and
JOBGING TRADE.

- Made right—for profitable business—can be had in bulk or in containers—under your own private brand

- Let us prove our statements regarding these three "best seller" grades. Write for free samples or for demonstration.

Empire Chemical Products Co.

12 LONGWORTH STREET

NEWARK, N. J.

WE ALSO MANUFACTURE

Liquid Floor Soaps
Rug Shampoo

Metal Polish
Disinfectants

Gym-Finish
Paste Wax

...everybody will be there!

The 16th Annual
DRUG—CHEMICAL
and Allied Trades
BANQUET

Hotel Waldorf-Astoria
New York

MARCH 13, 1941
(Thursday evening)

HAVE you made reservations for your group yet? Last year, the attendance exceeded 1,700, representing New York, Chicago, Philadelphia, Boston, and other large cities. The Drug and Chemical Dinner represents the one annual opportunity to meet and greet all of your friends in the trade in one place at one time

MAKE your reservations now! Take care of this today if you have not already done so, whether it be for several tables (10 persons each) or for smaller groups. Make your reservations by phone or letter now direct with

DRUG, CHEMICAL & ALLIED TRADES SECTION
New York Board of Trade
41 Park Row, New York
John C. Ostrom, Secretary

Salesman—Man with ten years sales experience, 33 years of age, desires position selling. Former experience in equipment and sporting goods to schools, colleges, clubs, churches, etc. Willing to start at bottom in chemical or sanitary products field. Address Box No. 970, care *Soap*.

Positions Open

Salesman to sell soap, cleaning compounds, industrial chemicals, polishes, waxes, etc., to industrial firms. Give references and salary expected. McCann Chemical Co., Louisville, Ky.

Perfumer: Experienced in the creation and duplication of soap perfumes. Excellent opportunity with large, long established essential oil house. State experience and qualifications. Address Box No. 974, care *Soap*.

Fatty Alcohols—Man who has had a few years laboratory experience in research and analysis of fatty alcohols and their derivatives. Must have had practical laboratory work in these products. This man is required for a part-time consulting job with a well-known laboratory. Address Box No. 971, care *Soap*.

Perfumer: One of the largest factors in the industry is interested in the services of a good creative perfumer for a permanent connection. State experience. All applications will be held in strictest confidence. Address Box No. 973, care *Soap*.

Janitor Supplies—Wanted by established firm in east, man with several years experience janitor supply business to assist president of company and aid in general management. Small capital investment required. Growing firm in good territory with experienced management. Give full details of experience, references, etc. Address Box No. 969, care *Soap*.

Soapmaker and Chemist Wanted: Experienced in manufacture of laundry and toilet soap, also glycerin recovery for permanent position in South America. Single man preferred. Knowledge of Spanish. Address Box No. 967, care *Soap*.

Miscellaneous

For Sale: Blanchard Soap Powder Mill No. 10 in good condition. Cheap. Sterling Soap Company, 1828 Amsterdam Avenue, New York. EDgcombe 4-0015.

A New Departure In Crutcher Performance

The HUBER ELECTRO PERFECTION CRUTCHER is now available in a new model,—with four forward and reverse speeds. The flexibility in operating technique afforded by this wider choice of crutcher speeds should be decidedly interesting to many soap makers. Available in three sizes,—1,500, 2400 and 3200 pounds.



HUBER MACHINE CO.

"Builders of Good Soap Machinery for the Past 45 Years"

265 46th STREET

BROOKLYN, N. Y.

F. & S.

Quality Colors for TOILET SOAPS LIQUID SOAPS

TOILET PREPARATIONS

Long experience enables us to produce colors for all types of soaps.

If you have a shade you want matched send us a sample. We have complete facilities for matching.

Liquid soap colors a specialty—send for samples of F. & S. greens and ambers.

FEZANDIE & SPERRLE, Inc.

205 FULTON STREET
NEW YORK, N. Y.

Import—Manufacture—Export

Registered Trade Mark



Pat. Sept. 1934 Pat. Aug. 1938

INSTANT DIFFUSER

Connects with factory steam or air line or operated by Fumeral Portable Air Compressors.

• Since 1932 we have specialized in the design and manufacture of various Stationary and Portable liquid diffusers and sprayers for the commercial dispersion of insecticides, disinfectants, deodorants, fumigants, chlorines, caustic soda solutions, perfumes and liquids of all kinds.

FUMERAL COMPANY

RACINE, WISCONSIN

We do not sell insecticides or fumigants.

"Good" Products at "Good" Prices

Manufactured by us under careful laboratory control.

DISINFECTANTS

Pine Oil
Coal Tar (Coef. 2 to 20)
Cresol Comp. U.S.P.
Cresylic

POTASH SOAPS

Liquid Soaps (up to 40%)
Soap Bases
Vegetable Oil Soaps
(Paste and Liquid)
Pine Scrub Soaps
(Liquid and Jelly)
Sassafrassy Scrub Soap
Soft Soap, U.S.P.
Auto Soap
Saddle Soap

SPECIALTIES

Self Polishing Wax
(Up to 20% solids)
Buffing Floor Waxes
(Liquid and Paste)
Liquid Metal Polish
Liquid Furniture Polish
Insecticide Sprays
Weed Killer (Liquid)
Fire Extinguishing Liquid
Soda and Acid Recharges
Drip Machine Fluid
Toilet Bowl Cleaner
Drain Pipe Cleaner
Roach Powder
Wax Base Cleaner
Coal Tar Animal Dip
Powdered Rosin



JAMES GOOD, Inc.

Manufacturing Chemists—Since 1868

2112 E. Susquehanna Avenue
Philadelphia, Pa.

ROTENONE and DERRIS RESINS

Manufacturers of finished insecticides have come, over a period of years, to look to DERRIS, INC. as headquarters for rotenone and derris products of all types. We are specialists in this field and are prepared to supply specifically compounded products made up according to each customer's varying needs.

Timbo Powder — Derris Powder
of Finest Grind

DERRIS, Inc.

79 WALL STREET NEW YORK, N. Y.



Prompt Delivery—Drums, Barrels, or Tank Cars.

INDEPENDENT MANUFACTURING CO.

Bridesburg P. O. Philadelphia, Pa.

Rebuilt Guaranteed Machinery: Crutchers; Plodders; Jones Automatic Soap Press; Foot Presses; Proctor Soap Dryer; 12x30, and 16x40 Three Roll Water Cooled Steel Mills; 2, 3, and 4 Roll Stone Mills; Johnson Carton Sealers; Powder Fillers and Mixers; Chippers; (vertical and horizontal) Mixers; Grinders; Boiling Kettles; Cutting Tables; Soap Frames; Filters and Filter Presses, etc. Send for Soap Bulletin No. 402. Stein Equipment Corp., 426 Broome St., New York City.

Factories Started:—Remodeled, Instruction in potash and toilet soap processes, detergents and cleaning compounds for defense industry. Full analyses and new formulation. Address Box No. 964, care Soap.

Floor Brushes—We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

Will Purchase Immediately—Pneumatic Packaging Machine, used for chips, powder, cleanser; also dry mixers, chip dryers, crutchers, and automatic soap press. Address Box No. 976, care Soap.

AS SURE AS 2+2=4



BLACKMER ROTARY PUMPS.

Save you money!

DRIVES: MOTOR, V-BELT OR FLAT BELT

BUCKET DESIGN
Automatically takes up Wear

Standard Blackmer rotaries are handling these and many other liquids—

caustics	hot fats
acids	emulsions
alcohols	liquid soaps
mineral oils	vegetable oils

- Delivers more gallons per penny.
- Steady flow. No foaming or churning.
- Standard units handle most soap and chemical pumping jobs. Saves cost of "special pumps."
- Capacities from 10 to 700 GPM. Built in 3 constructions; standard, with liner or steam jacketed.
- 20 to 25 years continuous service is not unusual for Blackmer pumps.

Get Blackmer data before you buy pumps. Write for Bulletin UB-320.

BLACKMER PUMP COMPANY
1892 Century Ave., S.W. Grand Rapids, Michigan

Valencia Pumice

Reg. U.S. Pat. Off.

The First and Only Pumice Originating in

AMERICA

Which satisfactorily supplants imported Pumice. Graded to your Specifications.

Write for samples and 12 page booklet of information

**BARNSDALL TRIPOLI CORPORATION
PUMICE DIVISION**

(Subsidiary Barnsdall Oil Co.)

SENECA, MISSOURI, U. S. A.

Neutral All-Purpose OIL SOAPS

—nu-crown: flo-crown

Easy to use Crown Bases are Adapted for all maintenance work

Made from refined vegetable oils, American Potash, and distilled water; Crown Base soaps are recommended for general cleaning purposes in hotels, office buildings, institutions, etc. Cuts grease, removes dirt and grime. Crown Base soaps work well on all surfaces safe in water.

Nu-Crown is a 60-65% soap. Lathers fast and heavy. Cleans thoroughly — rinses easily. **Flo-Crown**, a 75-80% soap, is recommended for use in making lower percentage soaps only. A semi-fluid base made easy to handle and easy to use.

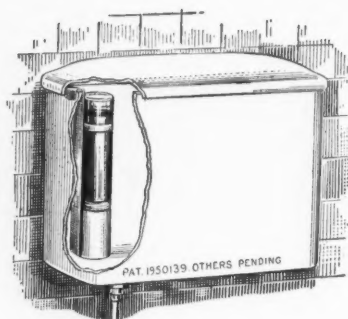


THE MARK OF PREMIUM QUALITY SOAPS

Peck's 5224-40 NORTH 2nd ST., ST. LOUIS, MO.
NEW YORK . . . KANSAS CITY

PRODUCTS COMPANY

Manufacturers for Jobbers Exclusively



DISTRIBUTORS WANTED FOR

STERYL-FLUSH

Concealed Guardian of the Modern Bath Room
CREATES NEW MARKET FOR YOUR PINE OIL

STERYL-FLUSH disinfects, deodorizes and keeps the entire toilet system clean. Does not cover up offensive odors, but removes them completely. STERYL-FLUSH fits inside the toilet tank where it operates unseen. It operates only when the toilet is used by flow of water. Non-corrosive and non-injurious to the hands. Pleasantly scented with pure pine oil—just enough to give the bath room a faint, cleanly odor of careful attention to sanitation.

SOLD EMPTY OR FILLED

STERYL PRODUCTS CORP.

112 S. 16th Street

Philadelphia, Pa.

"The Chemistry and Toxicology of Insecticides"

by

HAROLD H. SHEPARD, Ph.D.

University of Minnesota

*Should be included in the Technical
 library of every insecticide manufacturer*

This first complete volume given over solely to the subject of insect toxicology. The following subjects are covered in detail: History of insecticides; The principles of insecticide toxicology; The poisonous materials such as arsenicals, fluorides, copper compounds, etc.; Contact insecticides and adjuvants; Plant insecticides such as derris, pyrethrum, nicotine and various synthetic materials; Insect fumigants, attractants, repellants; Testing of insecticides. A fine compilation of technical and commercial information. 8 x 11, 383 pp.

Per Copy—4.00. Send Check With Order

MAC NAIR-DORLAND COMPANY

254 West 31st Street

New York City

CRESYLIC ACID

...

**HIGH BOILING
 TAR ACIDS**

...

**TAR ACID
 CREOSOTE OIL**

...

NAPHTHALENE

...

MIRVALE CHEMICAL CO., Ltd.

MIRFIELD

YORKS, ENG.

Calling **WYOMING!**

What is the matter with the Wyoming soap and sanitary chemical industry, our circulation manager wants to know. SOAP & SANITARY CHEMICALS has subscribers in 47 states, but Wyoming is still among the missing. Besides thoroughly covering the U. S. A. we do a fair job abroad. Subscribers numbering 552 in 56 foreign countries bear witness to the international influence of this publication. Annual subscription \$3 domestic, \$4 foreign.

RAW MATERIALS

AND EQUIPMENT

NOTE: This is a classified list of the companies which advertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index of Advertisements, page 139, for page numbers. "Say you saw it in SOAP."

ALKALIES

John A. Chew, Inc.
Columbia Chemical Div., Pittsburgh Plate Glass Co.
Diamond Alkali Co.
Dow Chemical Co.
Eastern Industries
Hooker Electrochemical Co.
Innis, Speiden & Co.
Michigan Alkali Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.
Warner Chemical Co.
Welch, Holme & Clark Co.

Standard Silicate Co.
Jos. Turner & Co.
Victor Chemical Works
Warner Chemical Co.
Welch, Holme & Clark Co.

COAL TAR RAW MATERIALS

(Cresylic Acid, Tar Acid Oil, etc.)

American-British Chemical Supplies
Baird & McGuire, Inc.
Barrett Co.
Innis, Speiden & Co.
Koppers Co.
Mirvale Chemical Co.
Monsanto Chemical Co.
Pittsburgh Coal Carbonization Co.
Reilly Tar & Chemical Co.
White Tar Co.

BULK AND PRIVATE BRAND PRODUCTS

Ampion Corporation (Soaps and Sanitary Chemicals)
Associated Chemists, Inc. (Insecticides)
Baird & McGuire, Inc. (Disinfectants)
Buckingham Wax Corp. (Wax Products)
Candy & Co. (Wax Products)
Chemical Mfg. & Dist. Co. (Soaps and Sanitary Chemicals)
Chemical Supply Co. (Disinfectants, etc.)
Davies-Young Soap Co. (Soaps and Floor Wax)
Empire Chemical Products Co. (Wax Products)
Federal Varnish Co. (Wax Products)
Franklin Research Co. (Floor Products)
Fuld Bros. (Soaps and Sanitary Chemicals)
James Good, Inc. (Sanitary Chemicals)
Hysan Products Co. (Sanitary Chemicals)
Koppers Co. (Disinfectants)
Kranich Soap Co. (Potash Soaps)
Pecks Products Co. (Soaps and Sanitary Chemicals)
Philadelphia Quartz Co. (Detergents)
Reilly Tar & Chem. Co. (Floor Seals)
Sweeping Compound Mfrs. Co. (Sweeping Compound)
Uncle Sam Chemical Co. (Sanitary Chemicals)
T. F. Washburn Co. (Wax Products)
White Tar Co. (Disinfectants, etc.)
Windsor Wax Co. (Wax Products)

COLORS

Fezandie & Sperrle
Interstate Color Co.
Pylam Products Co.
Tamms Silica Co.

CONTAINERS AND CLOSURES

American Can Co. (Tin and Fibre Cans, Steel Pails)
Anchor-Hocking Glass Corp. (Closures and Bottles)
Continental Can Co. (Tin Cans)
Crown Can Co. (Tin Cans and Steel Pails)
National Can Co. (Tin Cans)
Williams Sealing Corp. (Closures)

DEODORIZING BLOCK HOLDERS

Fuld Bros.
Hysan Products Co.

INSECTICIDES, SYNTHETIC

Associated Chemists, Inc.
Dodge & Olcott Co.
John Powell & Co.
Rohm & Haas Co.
U. S. Industrial Chem. Co.
Whitmire Research Corp.

MACHINERY

Anthony J. Fries (Soap Dies)
Blackmer Pump Co. (Pumps)
Houchin Machinery Co. (Soap Machinery)
Huber Machine Co. (Soap Machinery)
R. A. Jones & Co. (Automatic Soap Presses and Carbonizing Machinery)
Karl Kiefer Machine Co. (Filling Machinery)
Koppers Company (Coal Tar Plants, Power Plants, Valves, Castings, Pipe, Tanks)
J. M. Lehmann Co. (Soap Machinery)
Proctor & Schwartz (Dryers)
C. G. Sargent's Sons Corp. (Dryers)
Sprout, Waldron & Co. (Mixing, Conveying, etc.)
Stokes & Smith Co. (Packaging Machinery)

CHEMICALS

American-British Chemical Supplies
Chemical Mfg. & Dist. Co.
John A. Chew, Inc.
Columbia Chemical Div., Pittsburgh Plate Glass Co.
Diamond Alkali Co.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Eastern Industries
General Chemical Co.
Hooker Electrochemical Co.
Industrial Chemical Sales Div.
Innis, Speiden & Co.
Michigan Alkali Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Philadelphia Quartz Co.
Rohm & Haas Co.
Reilly Tar & Chemical Corp.
Solvay Sales Corp.

TAR ACID OIL

for use in

DISINFECTANTS

Makes White Emulsions.
Unusually High in Tar Acids

MANUFACTURED FROM
LOW TEMPERATURE COAL TAR

PITTSBURGH COAL CARBONIZATION CO.

H. W. Oliver Building

Pittsburgh, Pa.

Producers and Refiners of Coal Tar and Its Products.

Classified Advertising ~

Brings excellent results at a minimum cost. Rates are only 10c per word with a minimum charge of \$2 per issue (position wanted advertisements accepted at half rates). Whether you have some surplus equipment or material for sale, have a position open or are looking for a new connection, etc., use space in the Classified Section of *Soap*. It will place you in touch with the entire soap and sanitary chemical industry.

★ ★ ★ ★

We announce development of new type soap colors

PYLAKLORS

They have good fastness to alkali, light, tin, ageing.

The following shades are already available:

Bright Green	Dark Brown
Olive Green	Palm Green
Yellow	Golden Brown
True Blue	Violet

*It will pay you to send
for testing samples.*

PYLAM PRODUCTS CO., INC.

Manufacturing Chemists, Importers, Exporters

799 Greenwich St.

New York City

Cable Address: "Pylamco"

Direct Subway Entrance to all Points of Interest

New York's Popular

HOTEL LINCOLN

44TH TO 45TH STS. AT 8TH AVE.

OUR CHOICEST ROOMS From **\$3**

1400 ROOMS each with Bath, Servidor, and Radio.
★ Four fine restaurants awarded Grand Prix 1940 Culinary Art Exhibition.

MARIA KRAMER
PRESIDENT

John L. Horgan
Gen. Mgr.

HOTEL EDISON
SAME OWNERSHIP



IN THE CENTER OF MID-TOWN NEW YORK

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MACHINERY, USED

Consolidated Products Co.
Brill Equipment Corp.
Newman Tallow & Soap Machinery Co.

MISCELLANEOUS

American Standard Mfg. Co. (Wax Applicator and Mops)
Anchor-Hocking Glass Corp. (Metal Caps)
Barnsdall Tripoli Co. (Pumice and Tripoli)
Crosby Naval Stores, Inc. (Pine Oil and Rosin)
Dow Chemical Co. (Germicides, Agricultural Insecticides, Fumigants)
Filtrol Corp. (Purifying and Decolorizing Clay)
Industrial Chemical Sales Div. (Decol. carbon, Chalk)
Innis, Speiden & Co. (Fumigants)
Koppers Company (Coal, Coke, Roofing Materials)
Newport Industries, Inc. (Pine Oil and Rosin)
Pennsylvania Refining Co. (White Oils)
Pylam Products Co. (Lathering Agent)
Reilly Tar & Chem. Co. (Preservatives)
Steryl Prods. Corp. (Toilet Deodorizer)
Victoria Paper Mills Co. (Toilet Tissues)

OILS, FATS, AND FATTY ACIDS

Eastern Industries
Emery Industries, Inc.
Independent Manufacturing Co.
Industrial Chemical Sales Div.
Newman Tallow & Soap Machinery Co.
Orbis Products Corp. (Stearic Acid)
Welch, Holme & Clark Co.

PARADICHLOROBENZENE

John A. Chew, Inc.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Hooker Electrochemical Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.

PERFUMING MATERIALS

American-British Chemical Supplies
Aromatic Products, Inc.
Compagnie Parento
Dodge & Olcott Co.
Dow Chemical Co.
P. R. Dreyer Inc.
E. I. Du Pont de Nemours & Co.
Felton Chemical Corp.
Firmenich & Co.
Fritzsche Brothers, Inc.
General Drug Co.
Givaudan-Delawanna, Inc.
Magnus, Mabey & Reynard, Inc.
Monsanto Chemical Co.
Norda Essential Oil & Chemical Co.
Orbis Products Corp.
Ungerer & Co.

Van Ameringen-Haebler, Inc.
Albert Verley, Inc.

PETROLEUM PRODUCTS

Deodorized Insecticide Base, White Oils, Petrolatum, Paraffine Oils, Residues, etc.)

Atlantic Refining Co.
Pennsylvania Refining Co.
Shell Oil Co.
L. Sonneborn Sons, Inc.

PHOSPHATES

Trisodium, Sodium Pyrophosphate, etc.)

John A. Chew, Inc.
E. I. du Pont de Nemours & Co.
General Chemical Co.
Monsanto Chemical Works
Victor Chemical Works
Warner Chemical Co.

PYRETHRUM AND ROTENONE PRODUCTS

Insect Flowers and Powder, Pyrethrum Extract, Derris Products)

Associated Chemists, Inc.
Derris, Inc.
Dodge & Olcott Co.
S. B. Penick & Co.
R. J. Prentiss & Co.
McCormick & Co.
McLaughlin, Gormley, King Co.
John Powell & Co.

SILICATES

E. I. du Pont de Nemours & Co.
General Chemical Co.
Philadelphia Quartz Co.
Standard Silicate Co.

SOAP DISPENSERS

Ampion Corp.
Bobrick Mfg. Co.
Chemical Mfg. & Dist. Co. (Dishwashing Comps.)
Fuld Bros.
Presto Mfg. Co.
Sugar Beet Prods. Co.

SPRAYERS

Breuer Electric Mfg. Co. (Electric)
Fumeral Co. (Pressure Sprayers, Steam, Air, CO₂ gas)
H. D. Hudson Mfg. Co.

WAXES AND GUMS

Carnauba, Shellac, Candelilla, etc.)

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Announcement . . .

PRICES for the 1940 Official Test Insecticide, which will remain official until June, 1941, have been advanced in accordance with a unanimous action of the Board of Governors at the recent annual meeting. The 1940 O.T.I. is now priced at \$5.00 per dozen bottles. To all non-members of the N.A.I.D.M., there is added to this price a service charge of \$1.00 per dozen.

This advance in price has been occasioned by an attempt to reduce the monetary loss to the N.A.I.D.M. resulting from the manufacture, packaging and distribution of the O.T.I.



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Tale Ends

AT the recent meeting of the Association of American Soap & Glycerine Producers in New York, there were on the table at luncheon cigarettes of a well-known brand which advertised quite extensively that no glycerine is used in the tobacco which they contain. This caused a few chuckles among the soapers present and some embarrassment to N. N. Dalton, the well-known glycerine expert.

Two of the most important pieces of soap news of the month both emanate from Cambridge. The first is the announcement of a new cake of white floating soap—"Swan"—which is apparently to be a direct competitor with "Ivory." The second story has to do with Lever's best seller—"Lifebuoy"—in the merchandising of which the "B.O." theme and the cresylic odor have been outstanding for years. Now the cresylic odor has been quietly abandoned in favor of a pine odor, while the "B.O." theme has been subordinated in favor of "zephyr-freshness."

In case of a U. S. at war, coconut oil could be the "Achilles heel" of the soap industry, experts seem to agree. Accumulation of heavy surplus coconut oil stocks by a number of soapers over the past year has been noted.

A report indicates that Paper-makers' Chemical, subsidiary of Hercules Powder, will definitely retire from all and any part of soap and detergent manufacture come March first.

The 1941 *Blue Book* will be ready for distribution to regular paid subscribers of *Soap & Sanitary Chemicals* about March 1. Is your subscription paid up? If you have received a subscription renewal notice lately, be sure and send in your check promptly so that you will not miss your copy of the new and enlarged 1941 *Blue Book*.

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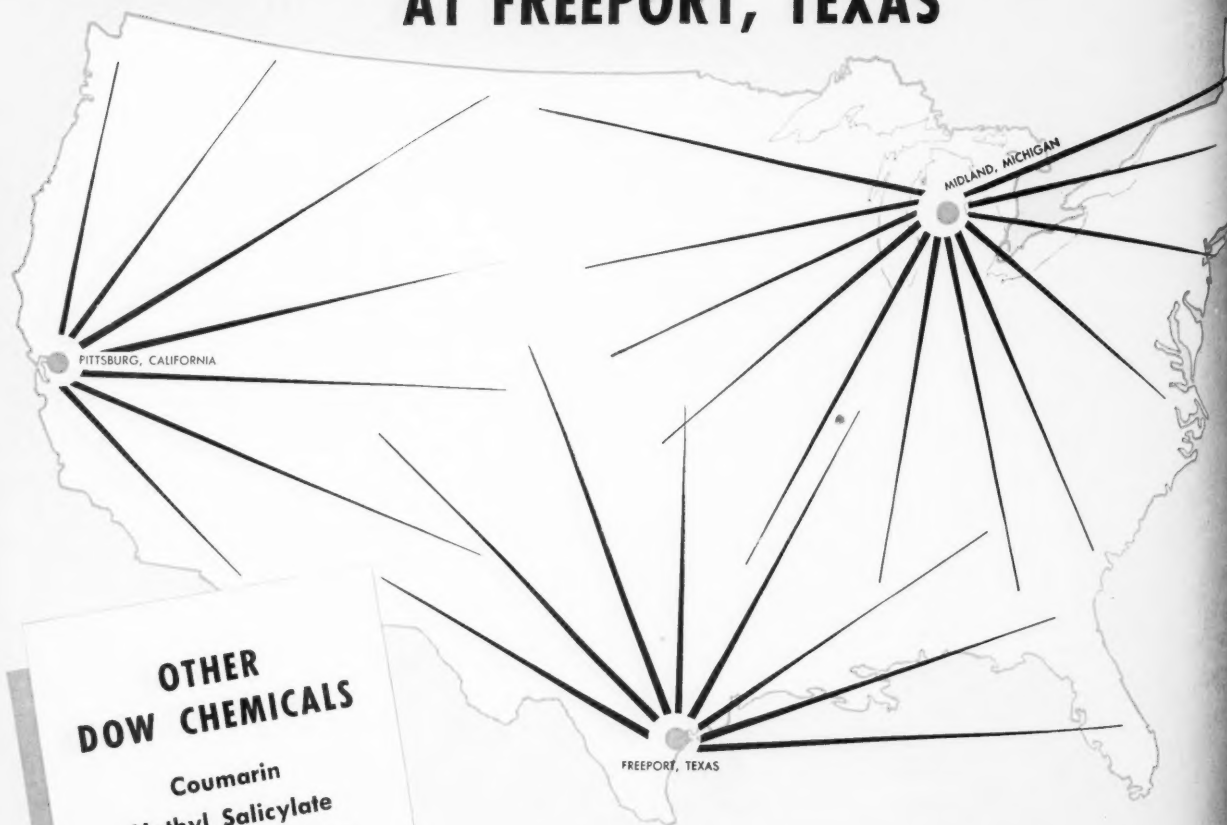
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